EPS GAME-MEDIA

PROCESS DOCUMENT

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PRiNT3D

THE VR GAME

The Task

Design and develop a VR/XR/AR application that educates and engages users in the infrastructure and use of the university's Industry4.0 Labs. The application should include informative elements such as documentaries, tutoring videos in 2D or 360°, animations, audio content, as well as interactive elements such as problem-solving gamification approaches, quizzes, exergames, or game-like example scenes.

The platform should run standalone on a Oculus Quest 2. For the development Unity and Wwise are recommended.

The goal is to provide an immersive and engaging experience that educates users about the industry 4.0 labs and promotes the use of the facilities through a fun and interactive learning experience.

Introduction to the Makerslab

We went to the Makerslab a few times. In the first place to get an introduction of the 3D printer. Most people in our group have never used a 3D printer before.

It was a short introduction that every student will get. The lecturer explains and demonstrates how to change a fillament and guides you through the different steps of slicing a model.

Visiting the Makerslab was also needed to know how the room looks like, since we had to recreate it in 3D. There is a 360° photo of it online, but by visiting is still useful, as it lets you remember it better.

Furtermore, some of us went to print something themselves to research on the whole workflow of the 3D printer. To do so, they printed something on their own. This is an efficient way to learn.
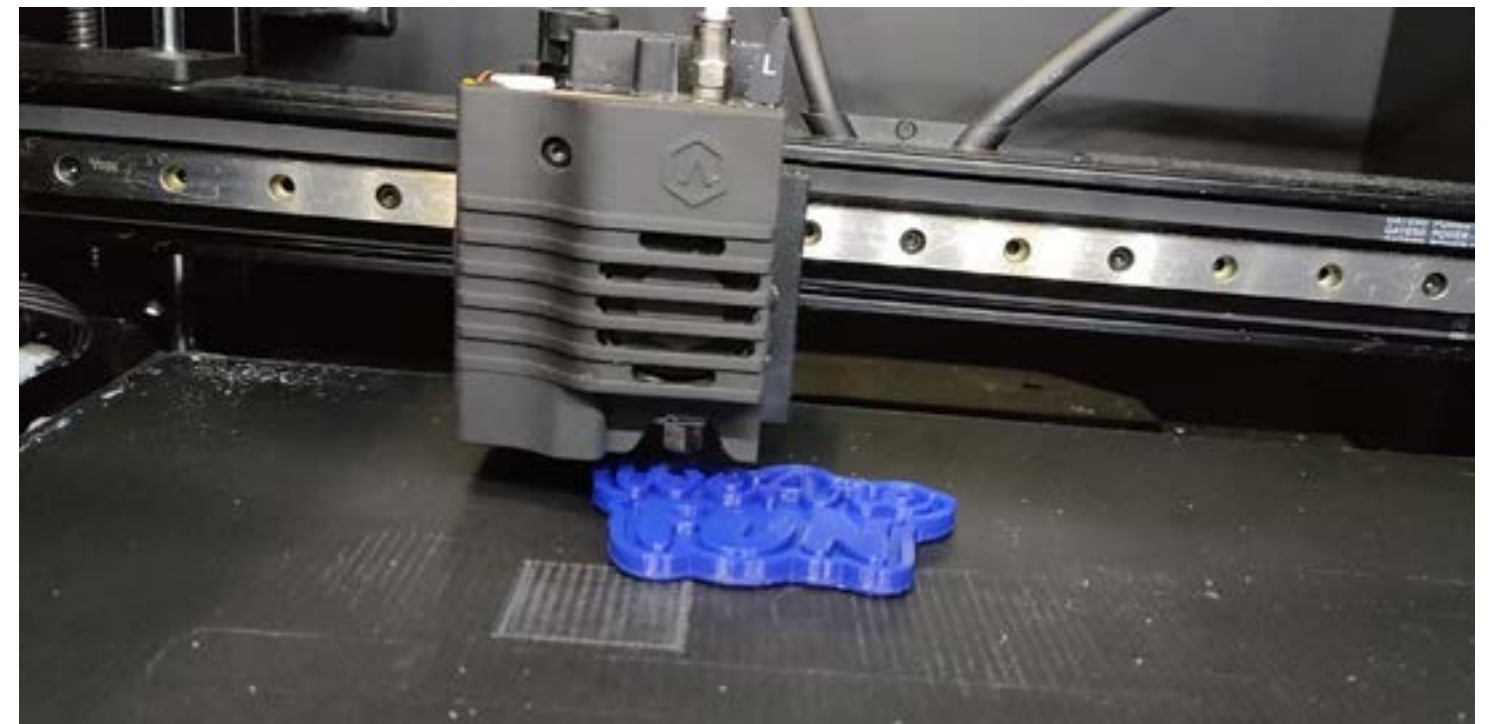
Audio - Sound Design

We looked up some sound designs we could use a reference to create our sound design. Job Simulator really stood out.

After watching more than five hours of gameplay, it became clear that the game choose to use a cartoonish style for the sound design.

They also use a basic sound design. In the sense that they didn't include all of the realistic elements of a sound effect or a room. For example, there is little to no electrical hums coming from machines in the mpa. The sound is only ativated when the player interacts with it and starts the machines.

Discovering this was very valuable information as the makers lab itself has a lot of electrical hums coming from various machines in the room, one of them is the 3D printer.

Brainstorming

For our brainstorming it was important to emphasise that every idea is welcome. We wanted to have as many ideas as possible so that we could narrow it down to three main ideas. Below you can see our list of all the ideas we had during this process.

- Escape room
- Earning badges
- Horror game
- Radio for music
- Different locations
- Virtual lab tour
- Project showcase
- Equipment tutorials
- Community forum
- Interactive lab map
- Training modules
- Easter eggs
- Mascotte
- Animal crossing talking sound
- Free Mode
- Interact with printed models
- Include errors
- Inspecting fillaments
- Trash can to undo
- Remove support material

We let all our ideas sit for a few days before we started discussing on which ideas we wanted to work with. To choose our main ideas, we did a voting. The ideas with the most votes, was what we were going to work with. Luckily, we all pointed in the same direction.

Must have:

- Earning badges
- Mascotte
- Free Mode

Could have:

- Easter eggs
- Interaction with printed items
- Different locations
- Radio for music
- Animal crossing speaking sound
- Inspecting fillaments
- Showing making off video in game
- Include errors

We also had the thought of combining our three main ideas into a bigger one.

Brainstorming

Earning badges

Minimum:

The student has to use the 3D printer step by step to learn how it works. In that way, the student knows the basics.

We create one room with one 3D printer, all recreated in 3D. Low poly style.

Maximum:

Log in with student number. The student has to complete several steps. After completion, it earns coins. With these coins, the student can buy more 3D models to print.

Mascotte

Minimum:

A robot helps you through the tutorial. It doesn't speak as a human, but makes cute speaking sounds and has simple mouth movements.

It has expressive emotions, which makes the robot a little bit dramatic. But that makes it the more fun.

Maximum:

The robot is excited to show the student around in the room. They lfies really fast through the room. However, the robot isn't really paying attention to what they is flying. They crashes against a wall and breaks their arm.

The robot then asks the student to print a new arm for them. They guide the student through the basics of the 3D printer and gives them multiple options. That way, there is an interaction between the student and the chaotic cute robot.

Free Mode

Minimum:

Free mode where the student can print 5 items. There is also an optional tutorial that the student can do.

We also want to include the student card into the game. The student needs to find theirs before they can use the 3D printer.

Maximum:

Free mode where the student can print 12 or more items, including forbidden items. When printing one of these items, they will get a warning saying that it is not allowed to print at school.
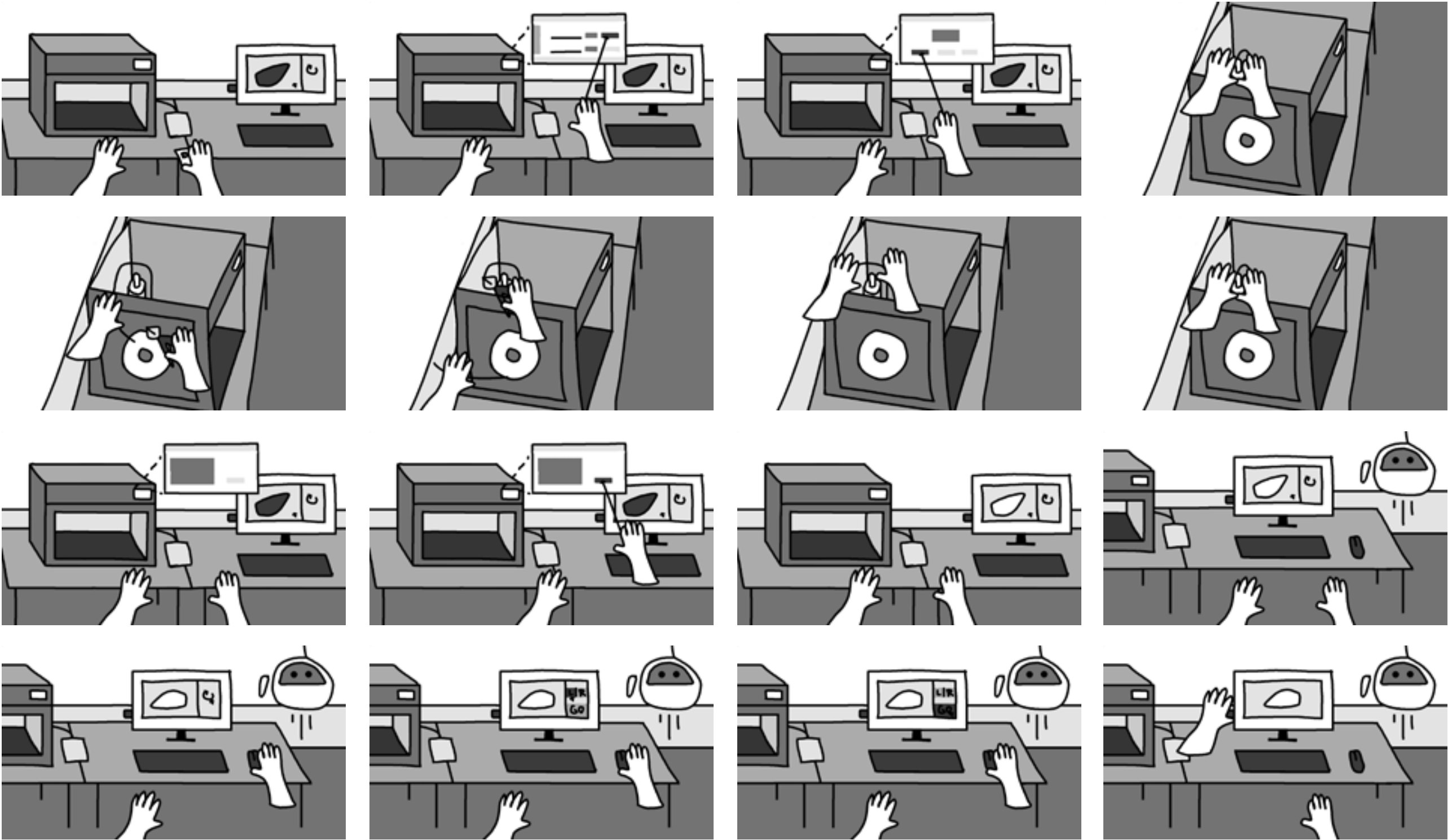
Furthermore, the student will get some errors, which they has to fix. Also, they can interact with the printed items. And they will learn how to remove the supporting material and how to change the fillaments.

Last but not least, there will also be a computer in the room, where the student can watch our making off video.
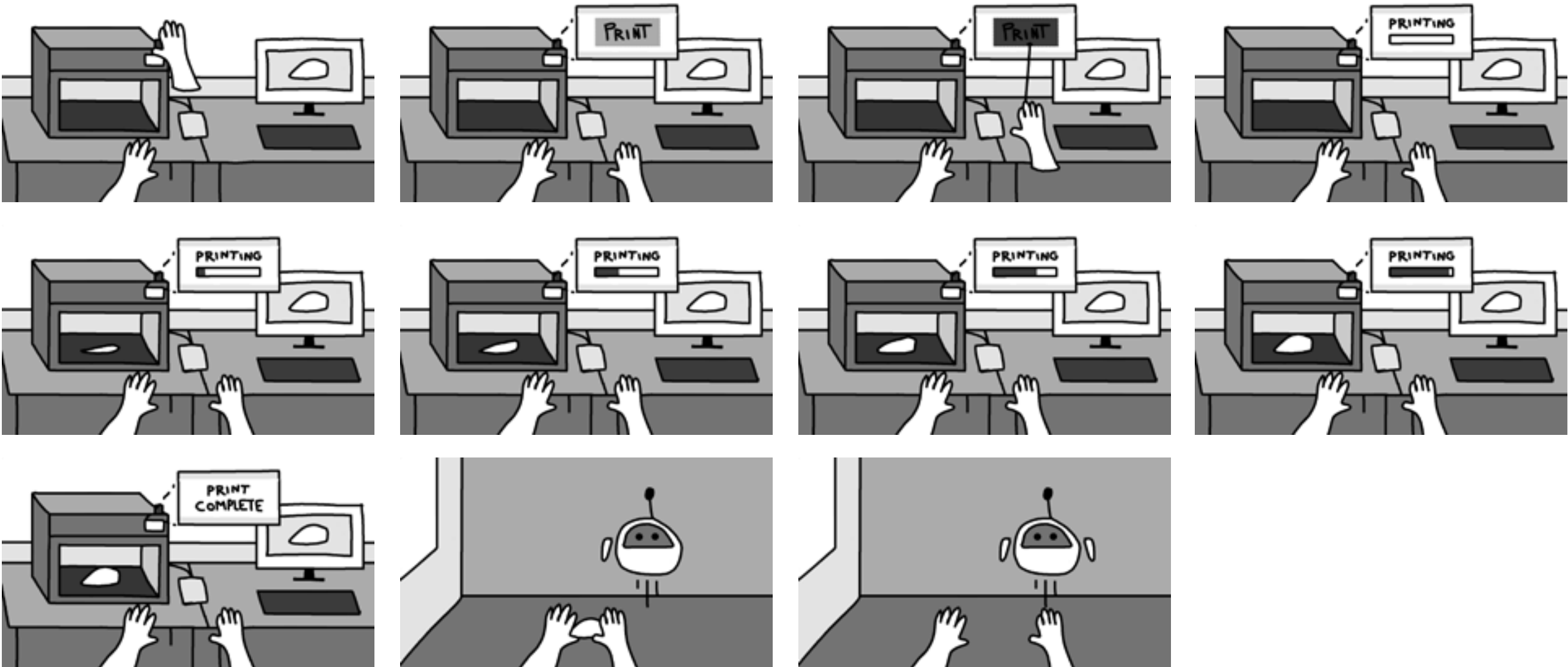
Storyboard
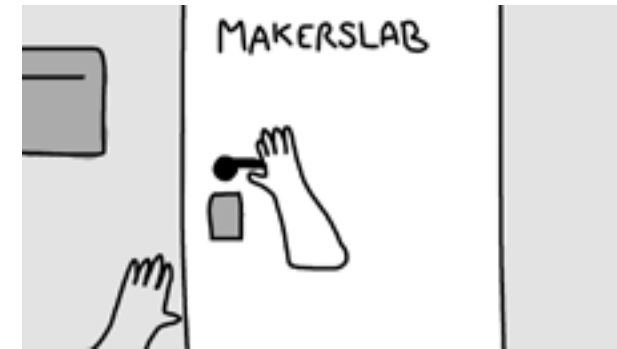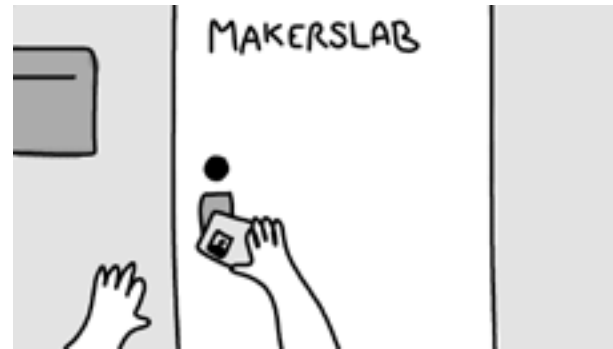
Storyboard

Storyboard

Script

CORRIDOR – NEAR ENTRANCE MAKERS' LAB

You are standing in front of the door of the Makers' Lab. You see a poster on the corridors wall on your left with the controls you need in the game. In front of you is the door to the Makers' Lab. You grab your student card. You hover the card over the doors lock. A log-in screen appears. You fill in your credentials. Then you open the door.

MAKERS' LAB – BROKEN ROBOT

While opening the door, you hit the robot. *SMASH!* You enter the room to see where the sound came from.

ROBOT

(mad animal crossing sounds)

Auchh!! You hit me! Be careful!

The door closes. *Sound of the door closing. * You see the robot in front of you. He looks really sad, as he has a broken arm.

ROBOT

(sad & hopeful animal crossing sounds)

My arm! My arm! It is in a thousand pieces. What do I do now? Oh I know it! You have to help me fix myself! I want to be whole again. Let's do this!

MAKERS' LAB – IDEAMAKER TUTORIAL

You go to the computer. You open Ideamaker. A video tutorial of the software starts playing.

ROBOT

(neutral animal crossing sounds)
First, go to the computer and open Ideamaker. You will see a short introduction video.

Script

MAKERS' LAB – IMPORTING MODEL

"No USB" appears on the screen. You unplug the USB from the 3D printer and plug it in the computer. You import the model of the arm in Ideamaker. You select the right model. The model has the wrong color. You start the printer by hovering your student card over the card reader. The printer is turned on. You follow the steps on the screen to unload the filament.

You move to the printer to unload the filament from the nozzle. You take out the wire and cut it at an angle. Then you open the side door of the printer to take out the filament.

After you take out the filament, you can change it to the one with the right color. You go get the right one and put it in the printer. Then you load the new filament.

ROBOT

(neutral and supportive animal crossing sounds)
Oh yeah! I forgot. We need to insert the USB first. Wohoo. Good! Time to import my arm! Oh no! It's the wrong color! I don't want to be a rainbow!

Go change the filament. Wait 'till the filament has the right temperature before unloading it. Remove the wire and cut it at an angle.

Pick the right color. Take out the filament spool. I want to look stunning!

Time to load! Woohoo! Oh perfect! The filament comes out the nozzle, as it should be.

MAKERS' LAB – PRINTING

You go back to the computer. The model has now the right color. However, it is still upside down. You rotate it so it's in the right position. Then you choose the right extruder. Once pressing "go", you are ready to print. YAY!

You take the USB out of the computer and plug it in the 3D printer. You press print. The model of the Robot arm is printing. Now you wait.

ROBOT

(neutral and supportive animal crossing sounds)
Oh no! It is upside down. Rotate it. Now it is time to choose the correct extruder. Go for the left/right one.

YAY! You are ready to print!

(Excited and impatient animal crossing sounds)
Start printing! Why does it take so long? Yes! It's done!! Finally!

Put it on me! Put it on me!

MAKERS' LAB – ENDING

The print is complete. You take out the 3D model of the arm and put it onto the robot. The robot is now whole again. He thanks you.

ROBOT

(happy animal crossing sounds)
YAY! I am whole again! Thank you! Thank you!

Branding

Name of the game

We wanted to play around with 3D in a word. In the early stage of the brainstorming, we had the idea of using "FRE3D". Pronounced as FREE-D.

The problem with this one was on one hand that we couldn't find a way to write this down so that people will pronounce it correctly.

On the other hand, we realised we were not able to make the free mode, so FRE3D didn't make sense anymore, as it referes to it.
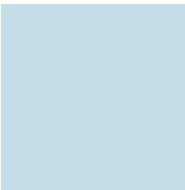
So we had to came up with a new name. We kept trying to play around with 3D. Eventually, we found ourselves a new name: PPRINT3D, pronounced as printed.

Primary Colors

We decided to use the colors from the Fh and Ideamaker, together with a lighter red and blue for contrast.

#4e0f11
rgb: 78 / 15 / 17
cmyk: 41 / 100 / 80 / 67

#c5dee7
rgb: 197 / 222 / 231
cmyk: 27 / 5 / 9 / 0

#a61e3a
rgb: 166 / 30 / 58
cmyk: 24 / 98 / 65 / 19

#005097
rgb: 0 / 80 / 151
cmyk: 98 / 70 / 9 / 0
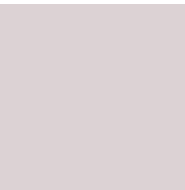
#dcd2d4
rgb: 220 / 210 / 212
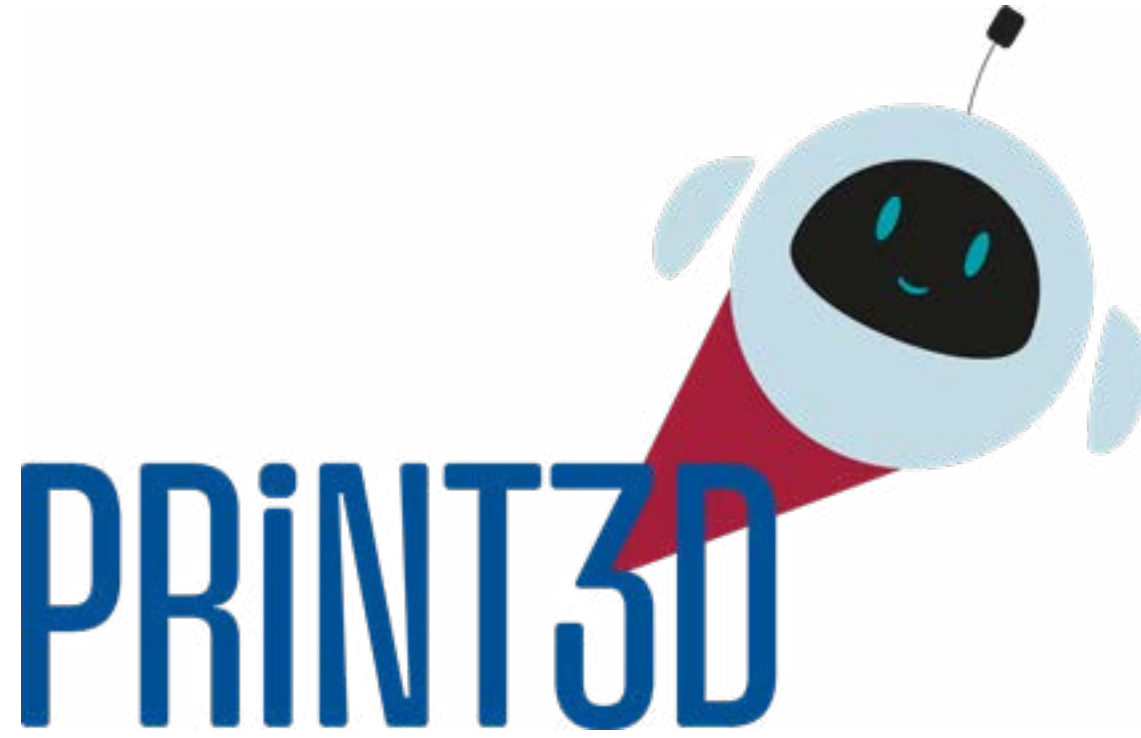cmyk: 16 / 14 / 18 / 0

Branding

Logo

For the logo, we wanted to include the robot of the game, as it plays a siginificant role in our game.

Furthermore, we also wanted to refer to ideamaker in our logo. We did this by modifying the i in PRINT3D to a lower letter, instead of a capital letter: PRiNT3D. This i refers to the i in the logo of ideamaker.
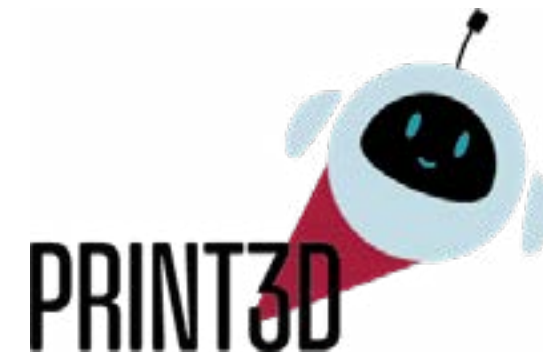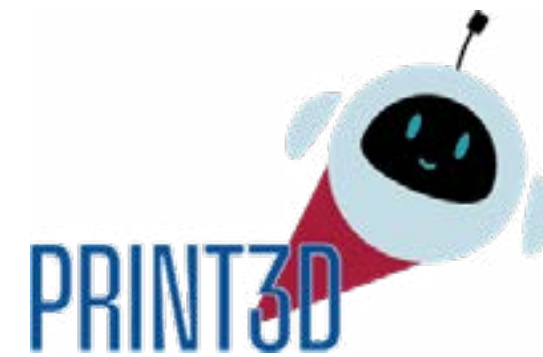
Branding

Logo

Final logo with Robot

Final logo without Robot

Robot

We wanted to have a cute little bouncy robot. The body contains two parts: a head and the lower-body. They are not attached to each other, which means that the head can move seperately from the rest of the body.

Both body parts can merge together in a tiny little ball. This makes the robot look playful. Which is one of the characteristics we wanted to include.

We also wanted to include the name of our game onto the robot.
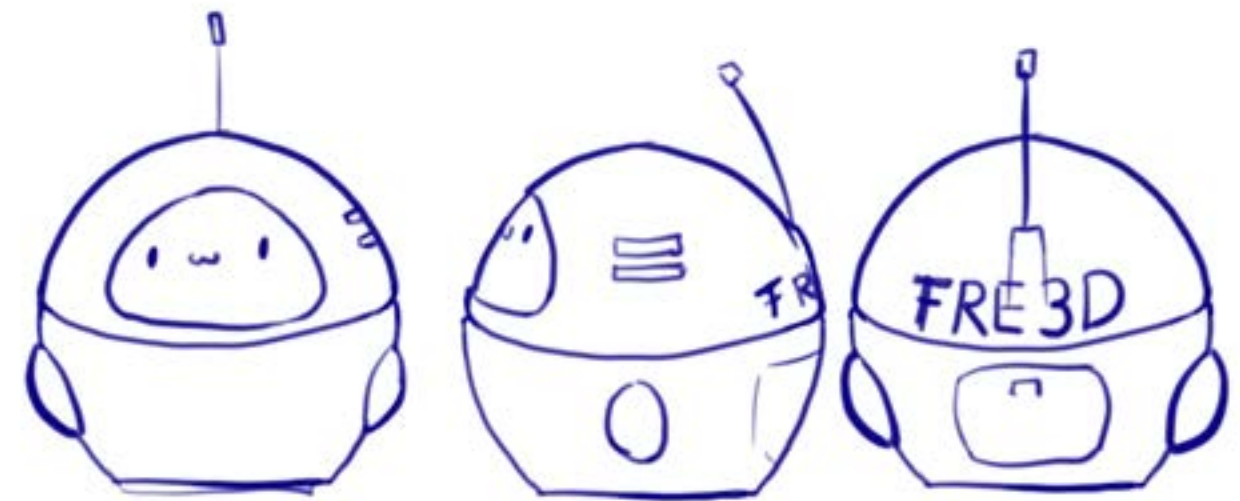
Sketches of Robot

Robot

Model of Robot

Texturing of Robot – Front

Texturing of Robot – Back

Robot

Neutral Robot Face

Happy Robot Face
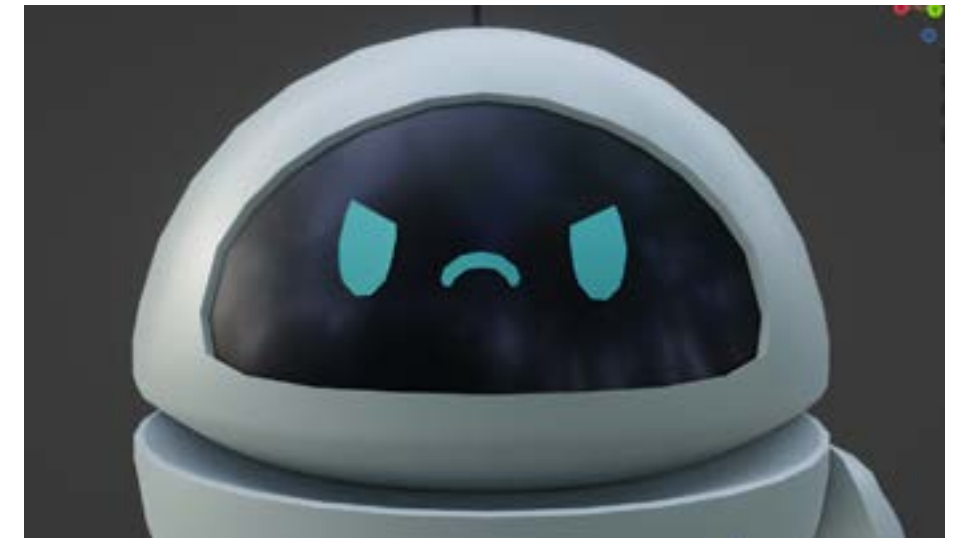
Mad Robot Face

Hurt Robot Face

Hurt Robot Face

Sad Robot Face

3D Printer

Since our game is about the 3D printer, we needed the exact 3D model to implement in our game. We asked the company Raise3D if they have a 3D model we could use. And they did.

However, it was not suitable for VR. It had too many vertices. So, we had to rebuild it from scratch.

The next step was to add the texture. We wanted the printer to look as real as possible, but still look low poly. Which means the texturing had to show that as well.

Now we have a fully interactable and low poly 3D printer. You can open all the doors, including the filament doors on the side.

At last, the printer has a printing animation that is used when printing the model.
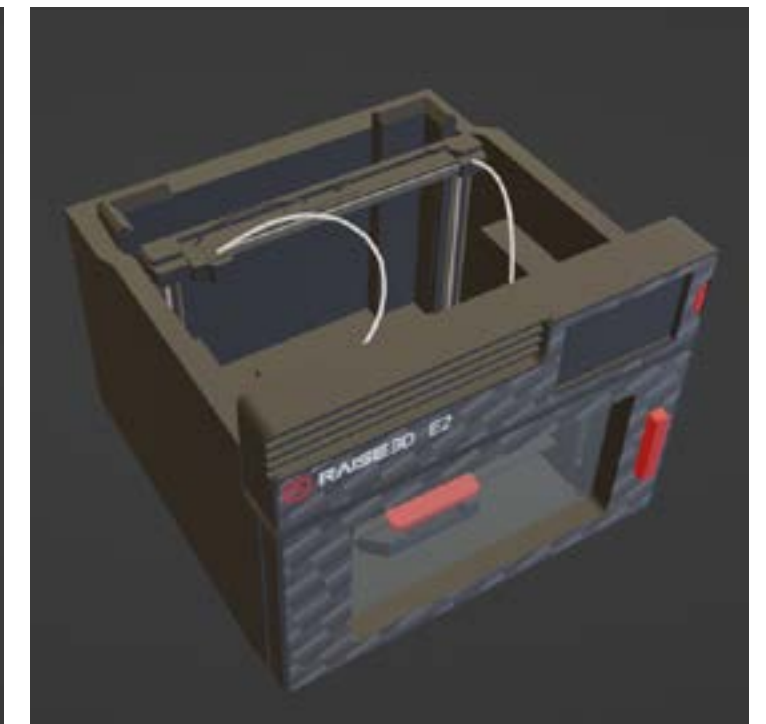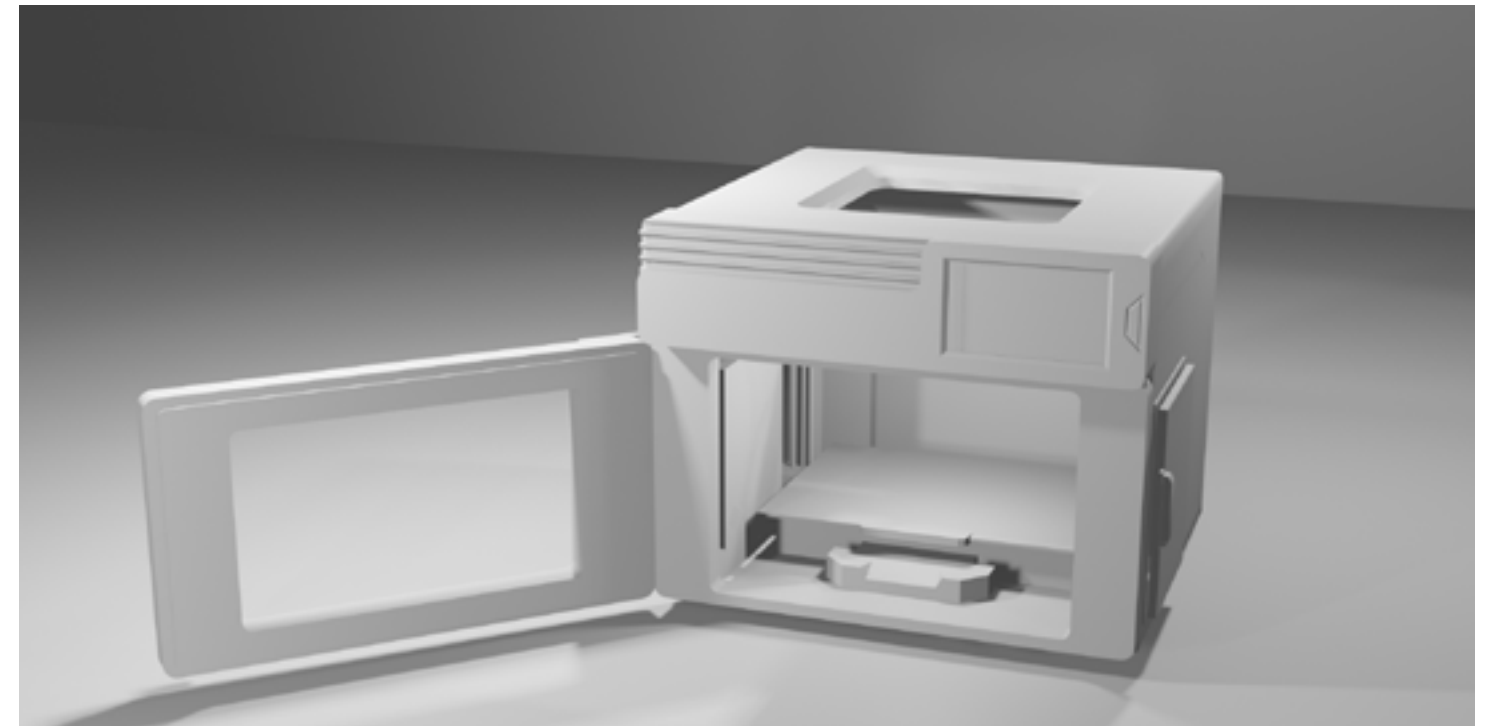
Room Decoration

The Makerslab of the Fh has a lot of items and furnitures in it. Since we wanted a low poly version of the room in the VR game, we had to make a lot of 3D models.

We went from an almost empty room to a fully decorated room. We even paid attention to the details such as outlets, ceiling decoration and smaller objects.
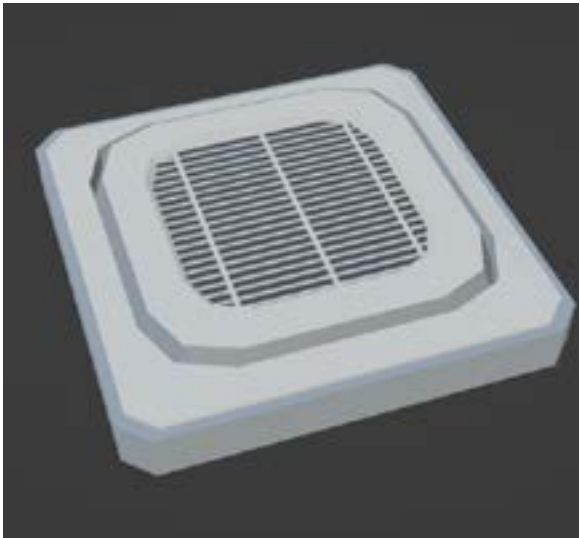
We also included the laser cutter as it is quite visable in the makerslab room. It is not interactable, but serves as decoration.
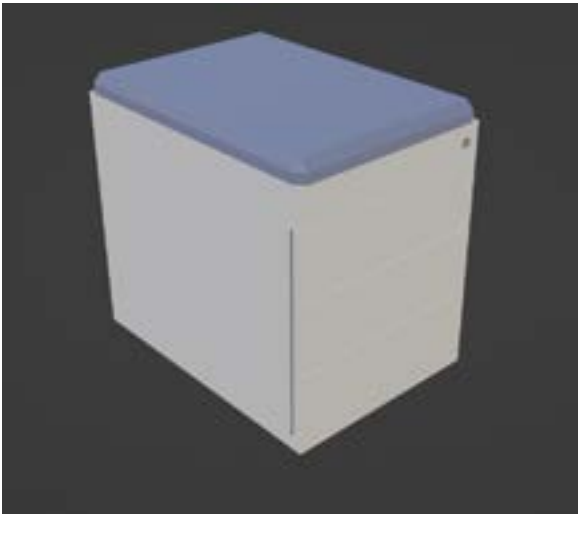
Room Decoration

Chair

Air Conditioner

Drawer

Drawer

Drawer

Decoration
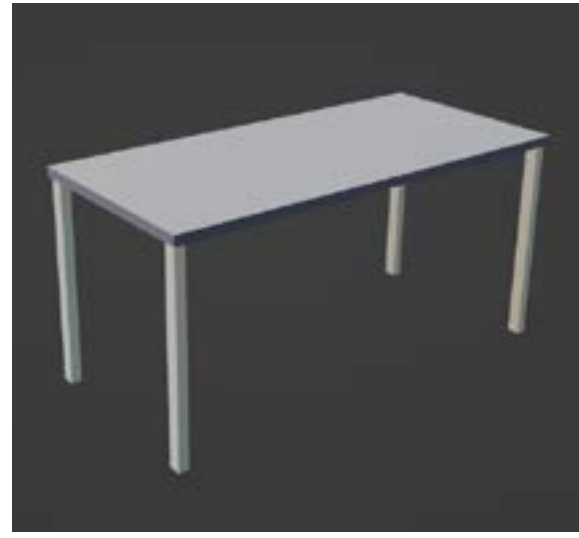

Decoration

Soldering tool

Extended outlets

Outlet
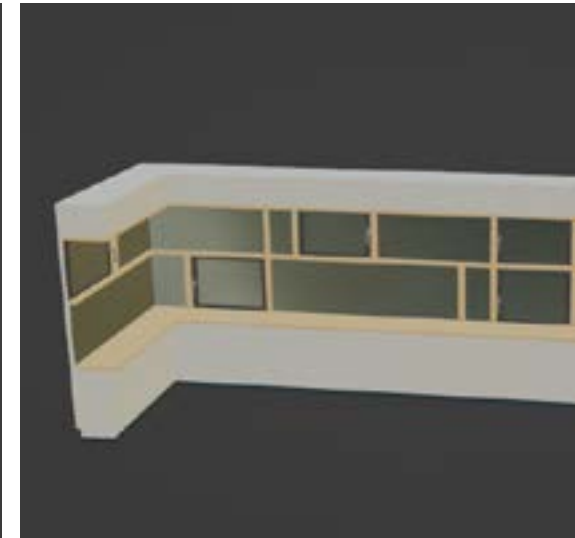
Room Decoration

Laser Cutter

Table

Working table

Windows

Robot without one arm

Computer Screen - Video

To print something with the 3D printer, you should first prepare your model for printing. This is done on the computer with ideamaker. You will have to go through several steps before your model is ready to print.

To help the student with this workflow, we included a short 2D animation video that show the different steps in ideamaker. It handles the most important steps such as orientating the model, slicing it and exporting for printing.

As we wanted to make the video as simple as possible to avoid confusion, we simplified the lay-out fo the software for the video.
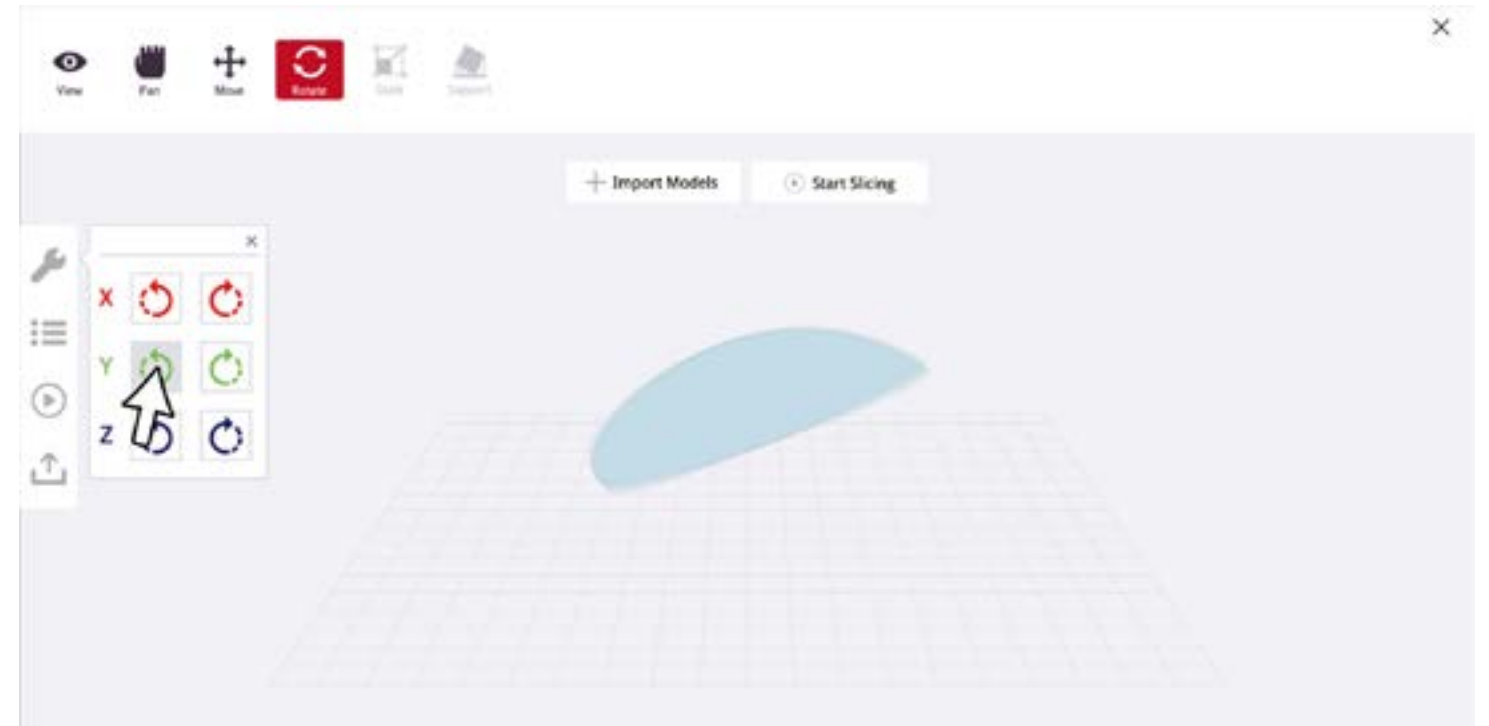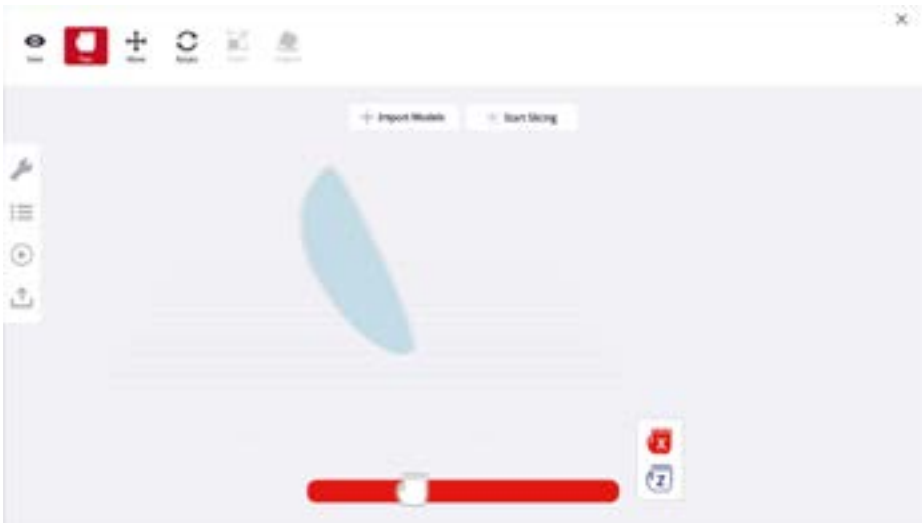

https://fhstp-my.sharepoint.com/:v:/g/personal/mt220037_fhstp_ac_at/
ERo0sGMXt9RDo8l7EJrKY8YBsPD4O9Yi5OJtUotq5D4O9w?e=aMdHGy

Computer Screen - Video

Video: import model

Video: pan

Video: move

Video: rotate

Video: slice

Video: slice

Computer Screen - UI

For the PC canvas, we wanted to replicate the original software as accurately as possible while providing only the necessary information. Therefore, we implemented only the buttons required for the entire slicing process, adding some extras to explain what the user shouldn't do, such as scaling the model or creating manual support material. For this purpose, we implemented warning messages.

The "View" and "Pan" buttons allow the user to rotate or move the view of the entire scenario. The "Move" and "Rotate" buttons enable moving and rotating the arm model within the scenario.

The remaining screens guide you through the slicing process, including a video tutorial at the beginning to help the player familiarize themselves with the interface.
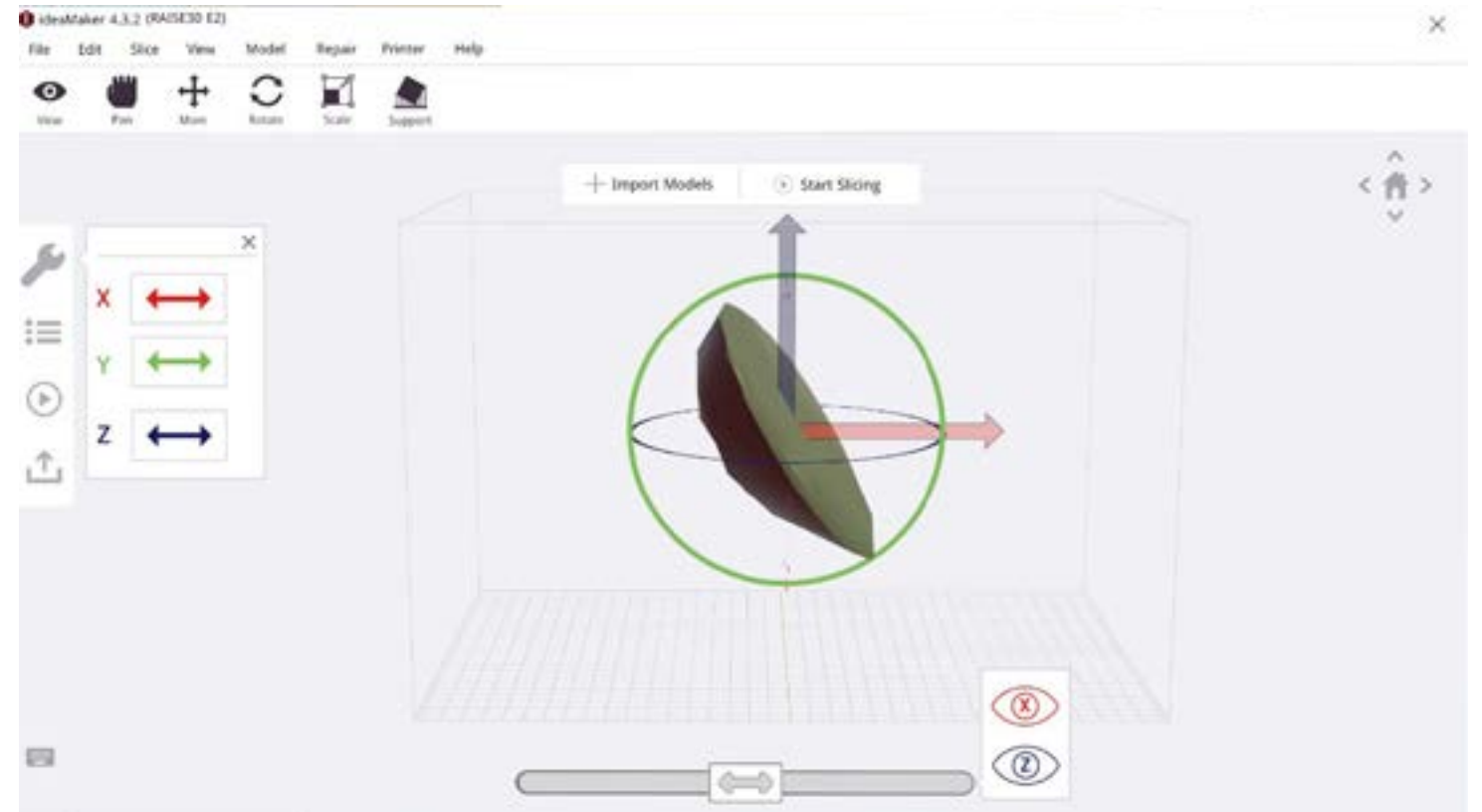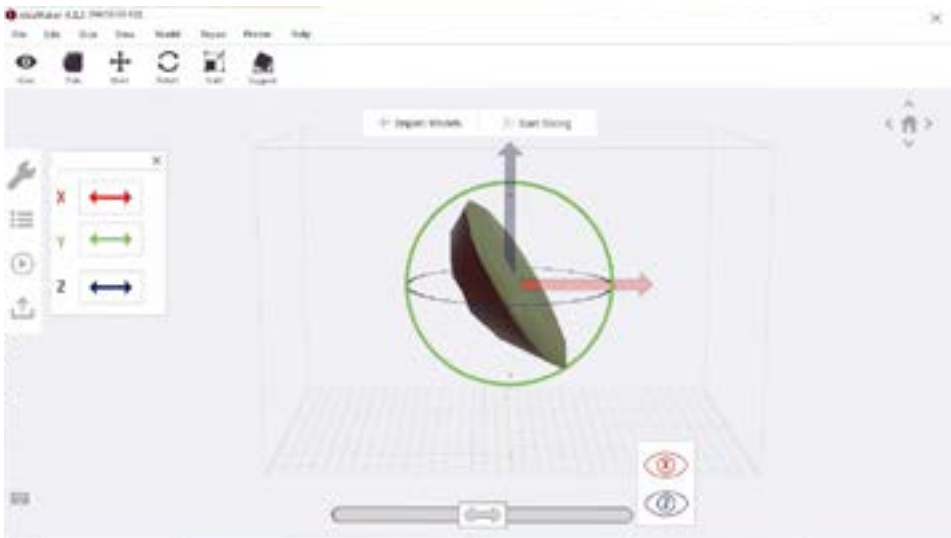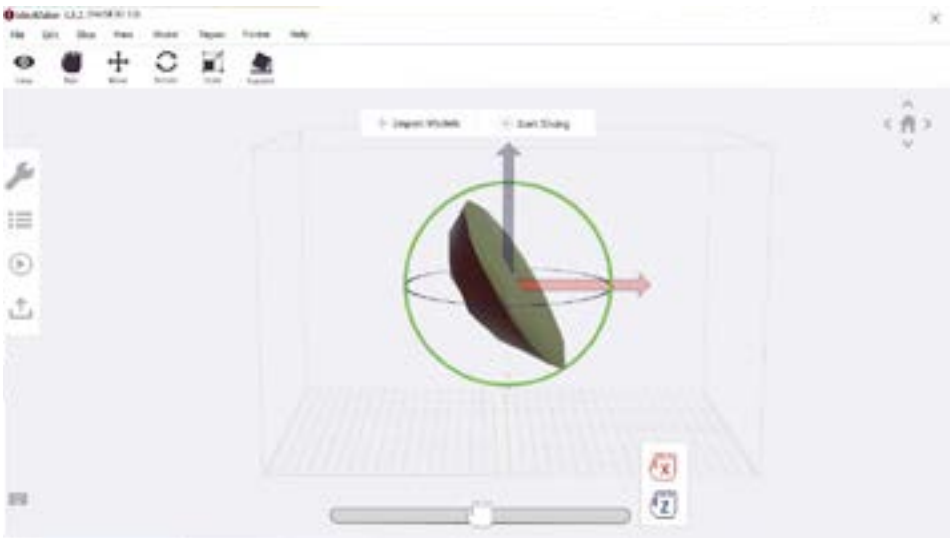
Computer Screen - UI
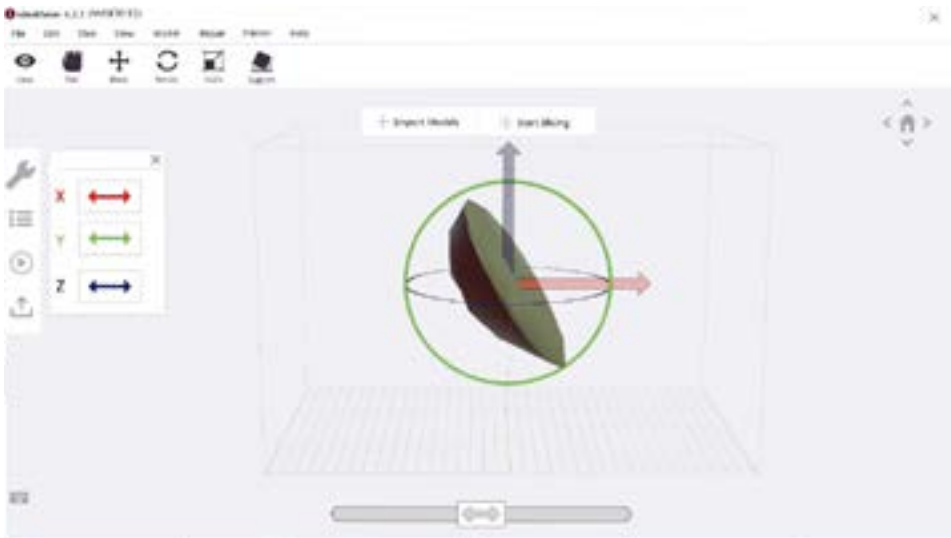

UI: start screen

UI: after video screen

UI: nu USB
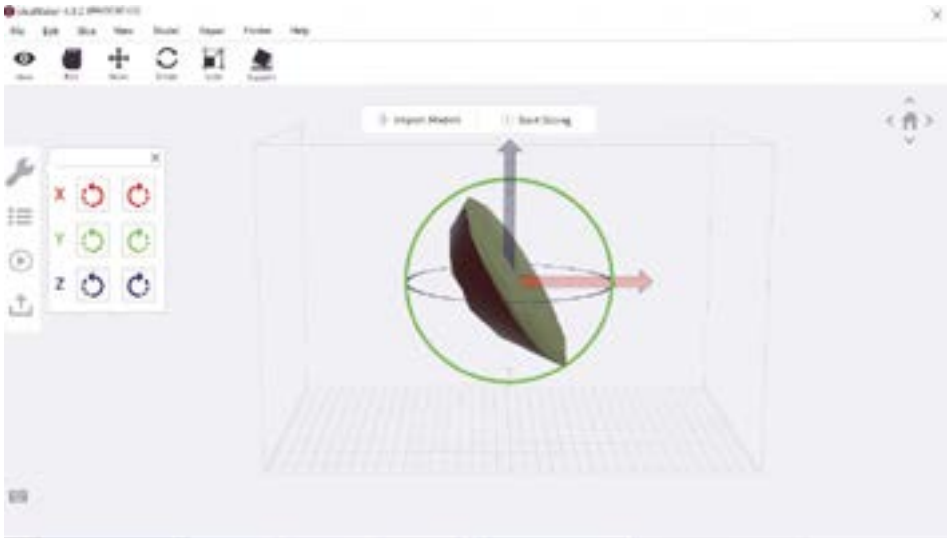

UI: view

UI: pan

UI: move

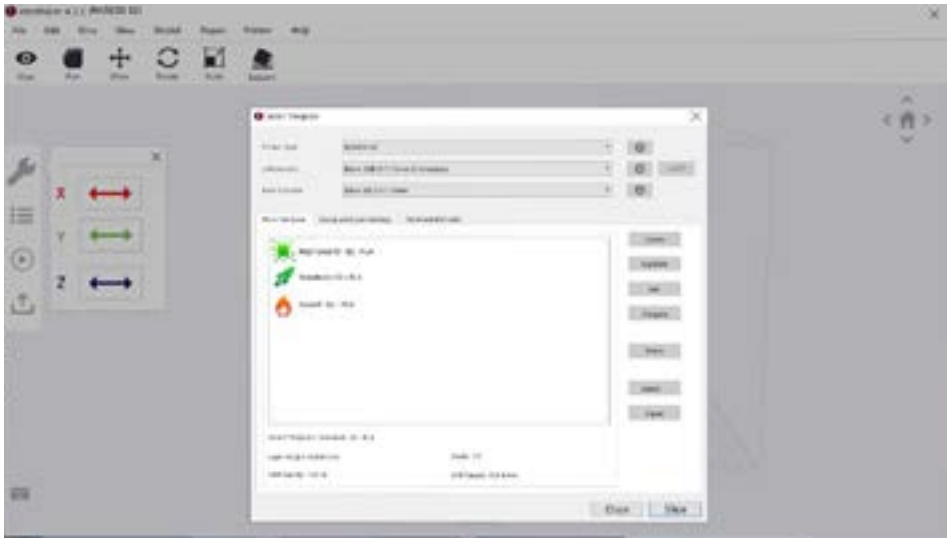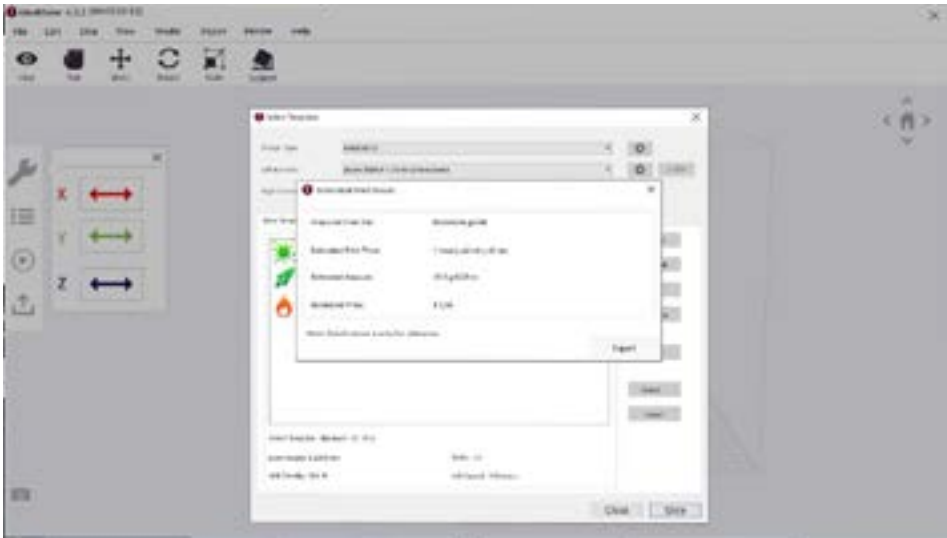# Computer Screen - UI

UI: rotate
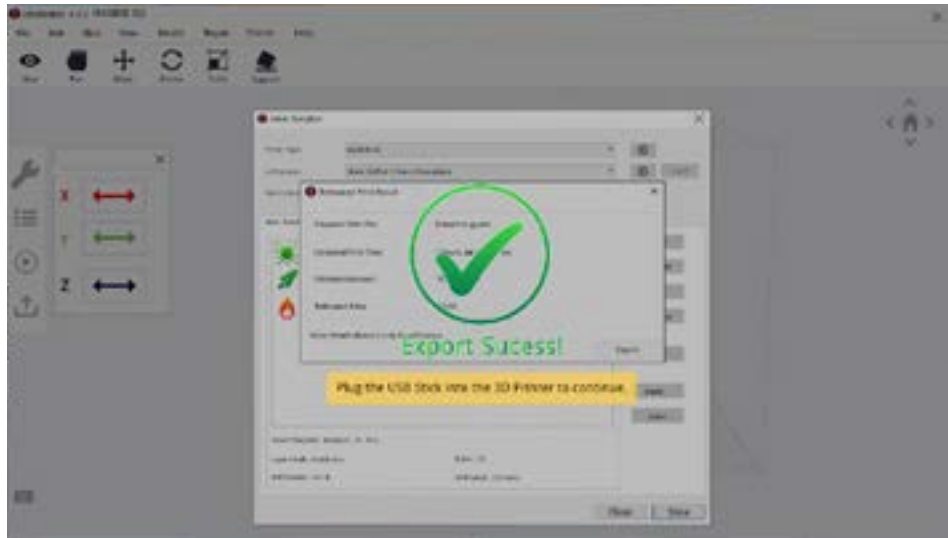

UI: warning scale

UI: warnig support

UI: slicing

UI: export

UI: export succes

Printer Screen

As for the 3D printer screen, we wanted to replicate the real software as closely as possible. Certain existing screens that are not relevant to the printing process have been omitted, since they are primarily used for adjusting additional details.

On the 3D printer screen, you can unload and load the filament in the "Utilities" tab and then initiate the printing process in the "Print' tab.

Since loading and unloading the filament yourself is not possible to do in VR, as the items are too small, we included some 2D animation videos to explain how you need to unload and load in real life.

To keep it as real as possible, we included the temperature and time indicators that increase during the gameplay. You don't have to wait as long as in real life, but you will have to wait a little.

In these screens, the user can unload and load the filament in the "Utilities" tab and then initiate the printing process in the "Print" tab. In both experiences, there are temperature and time indicators, respectively, that increase during gameplay.

For both the PC and printer canvas, we implemented a script to avoid the user to skip certain steps. Furthermore, the 3D printer screen is connected directly with the printing animation. This makes the printing experience even more real.
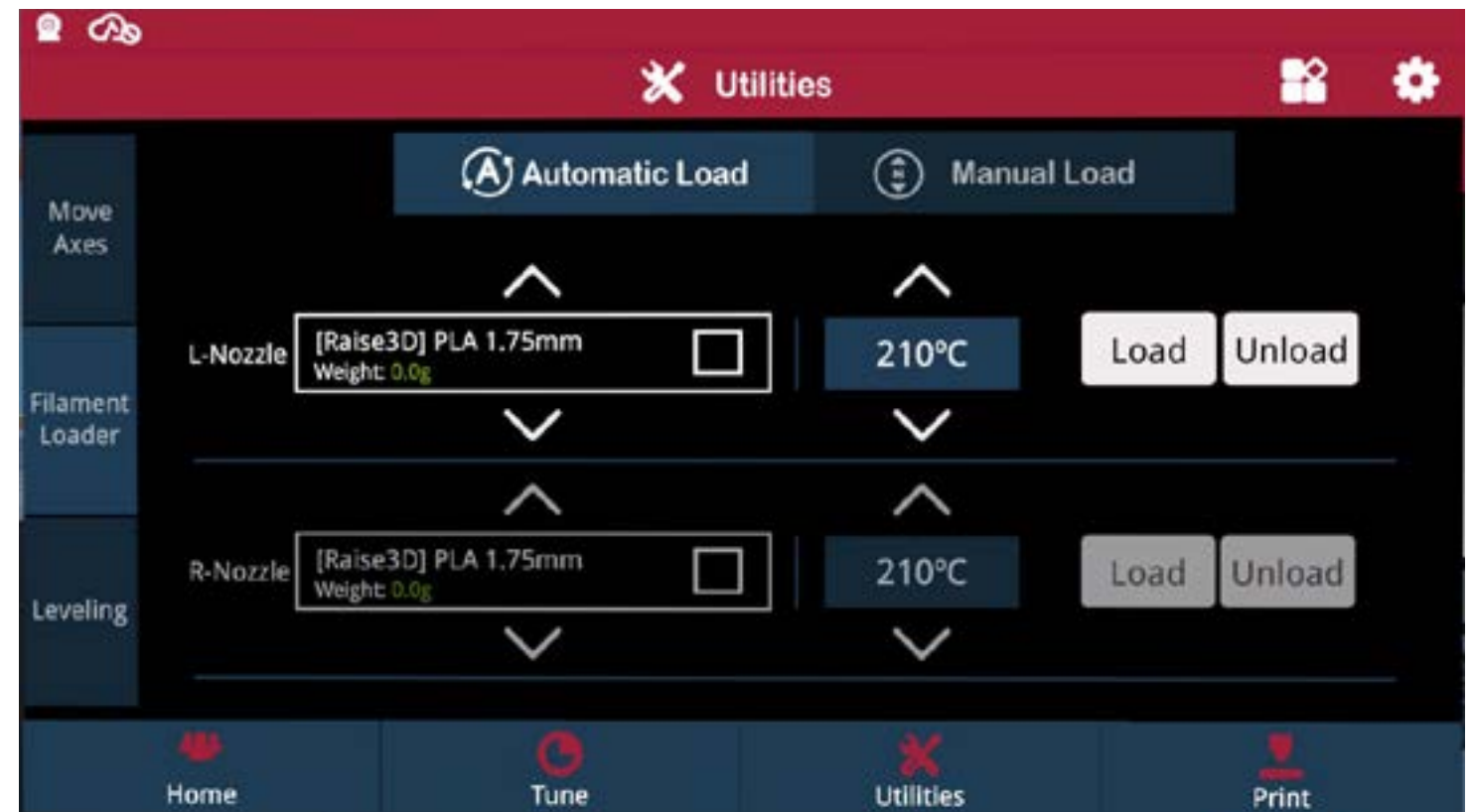
Printer Screen

UI: Start image
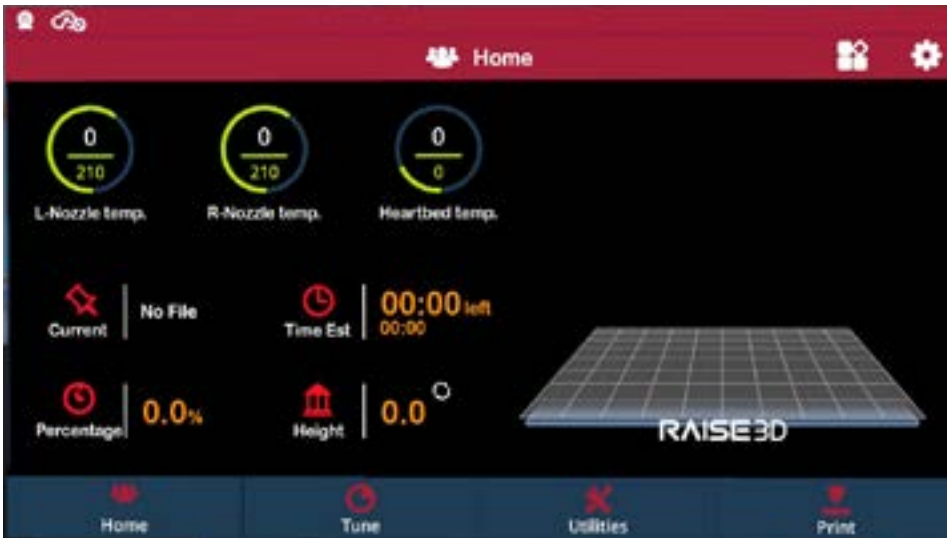
UI: Home Screen

UI: Utilities

UI: Unload

UI: Load

UI: Print, import model

Printer Screen

UI: Print, import model

UI: Print, import model

UI: Print

UI: Home, print preview

UI: End Printing

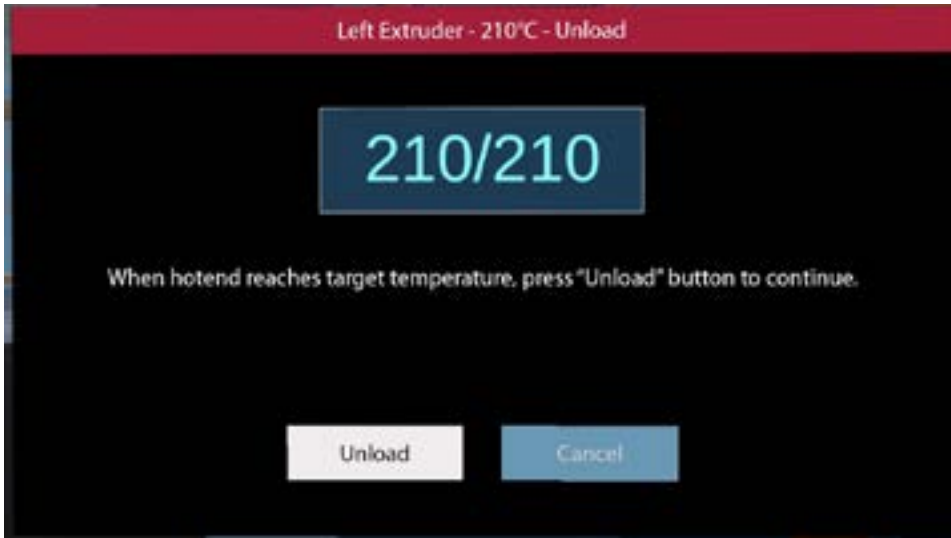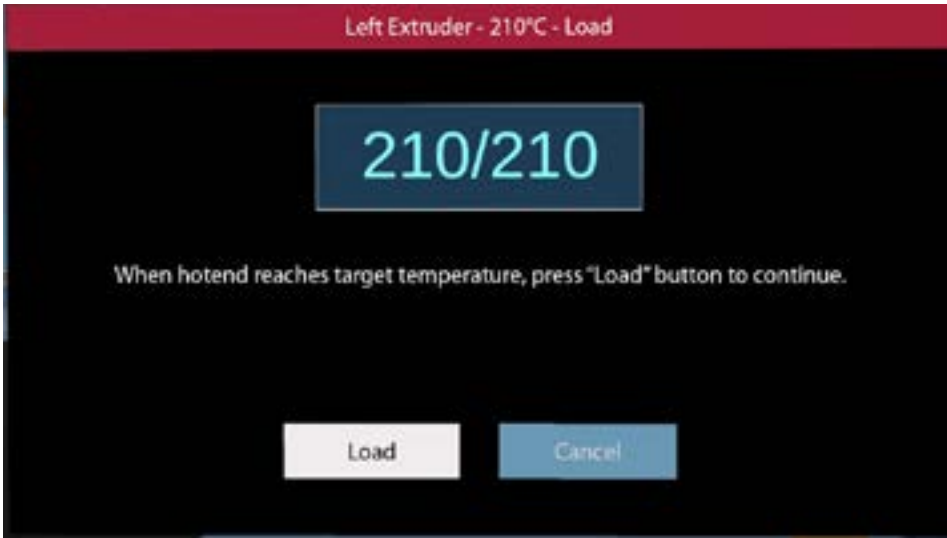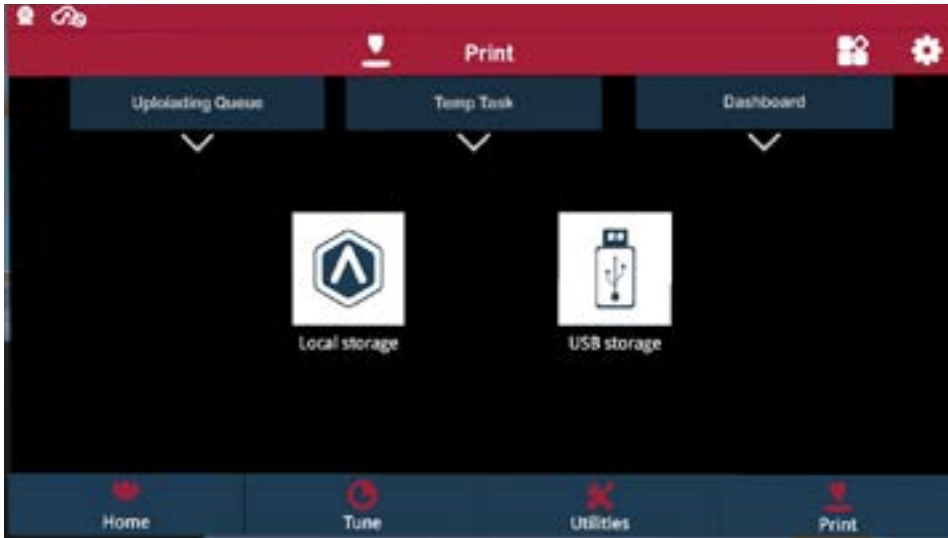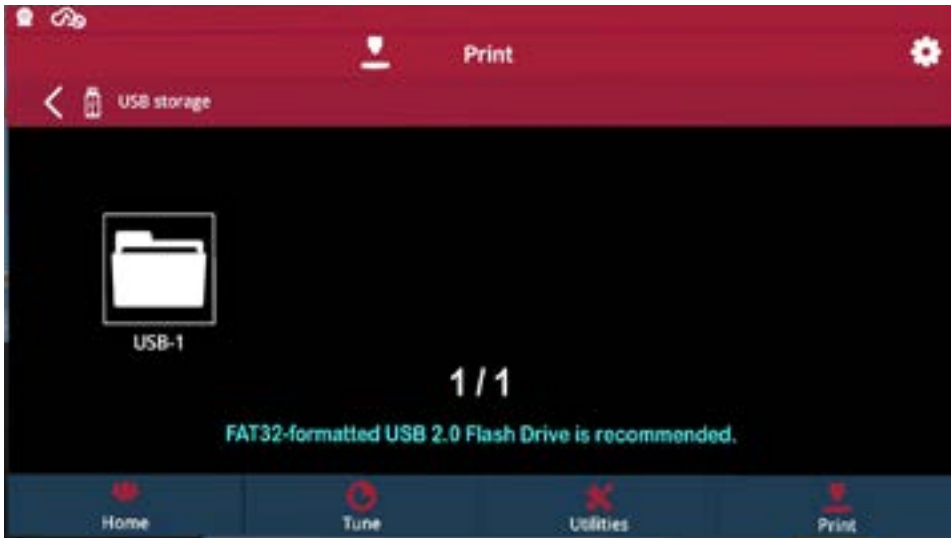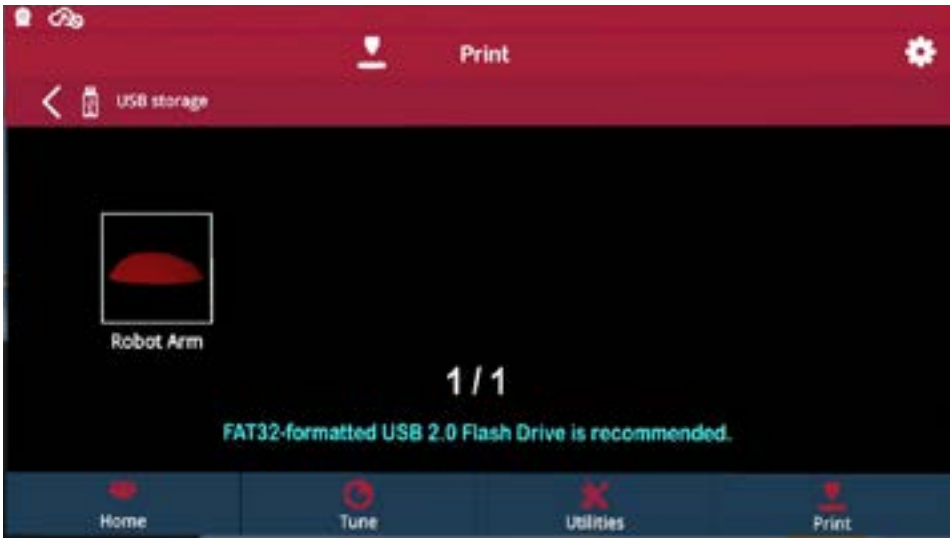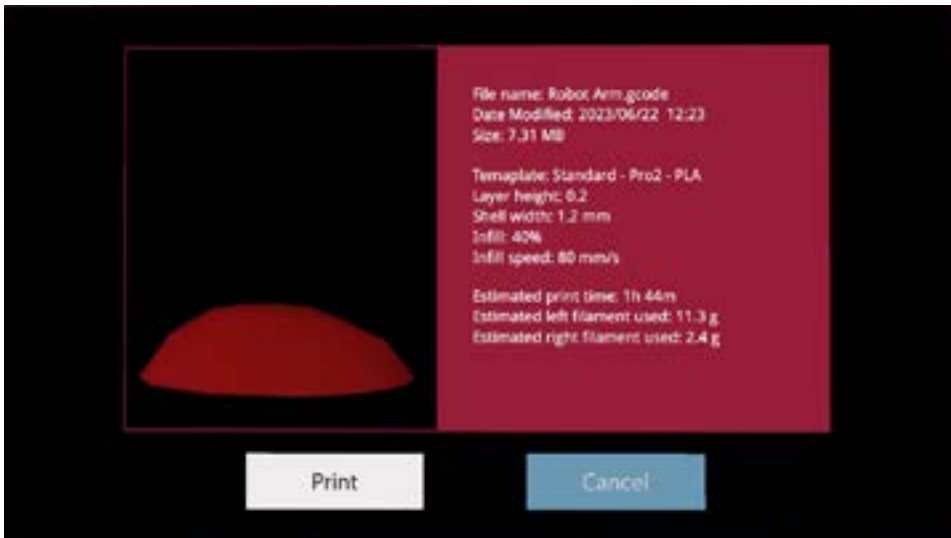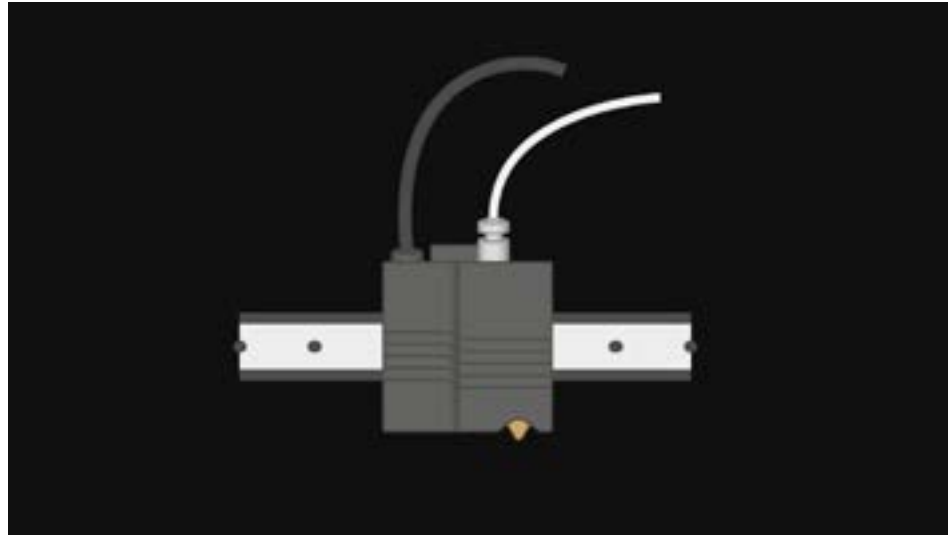# Printer Screen

Video: Unload
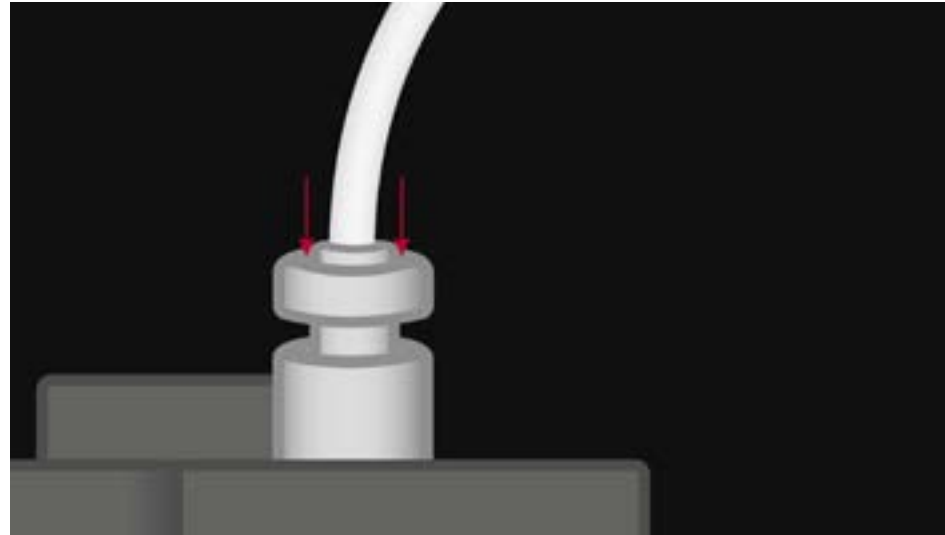
Video: Unload
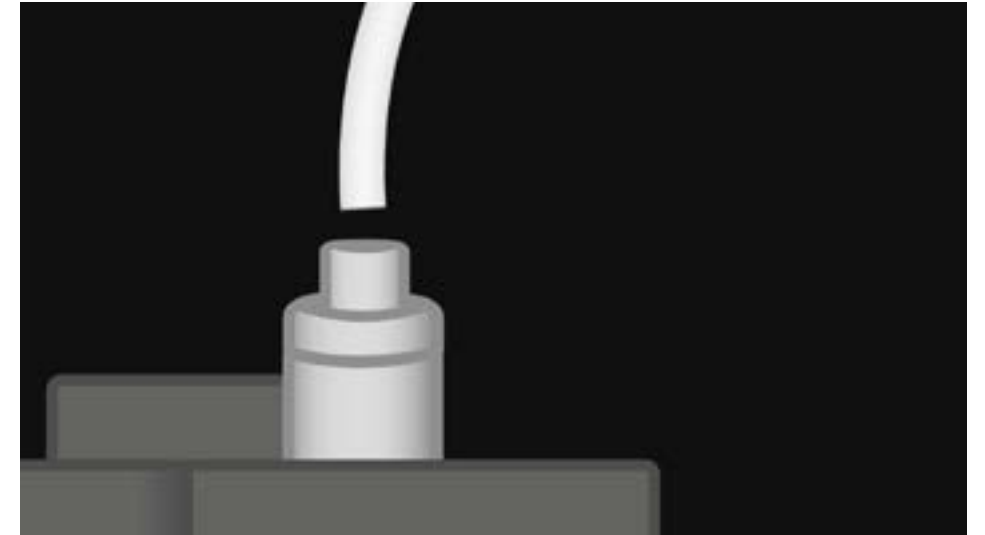
Video: Unload

Printer Screen
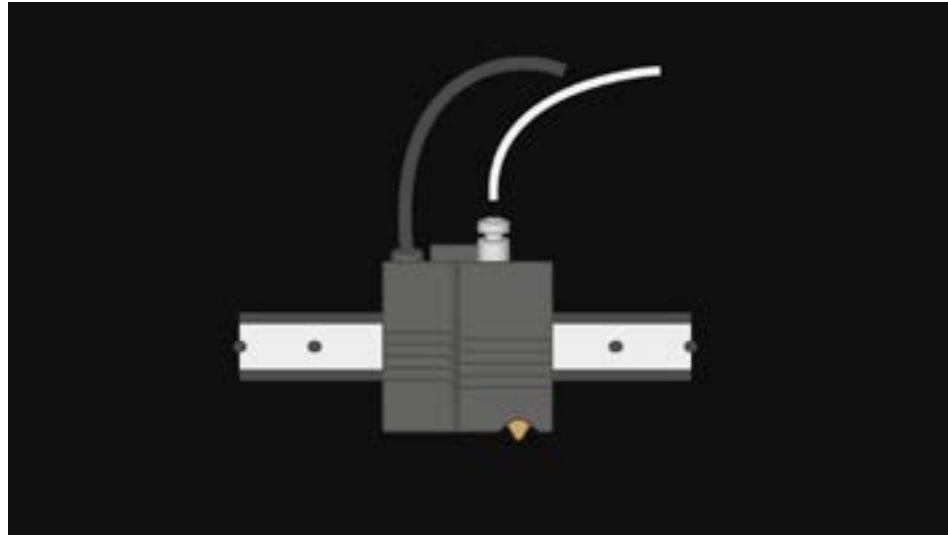
Video: Load
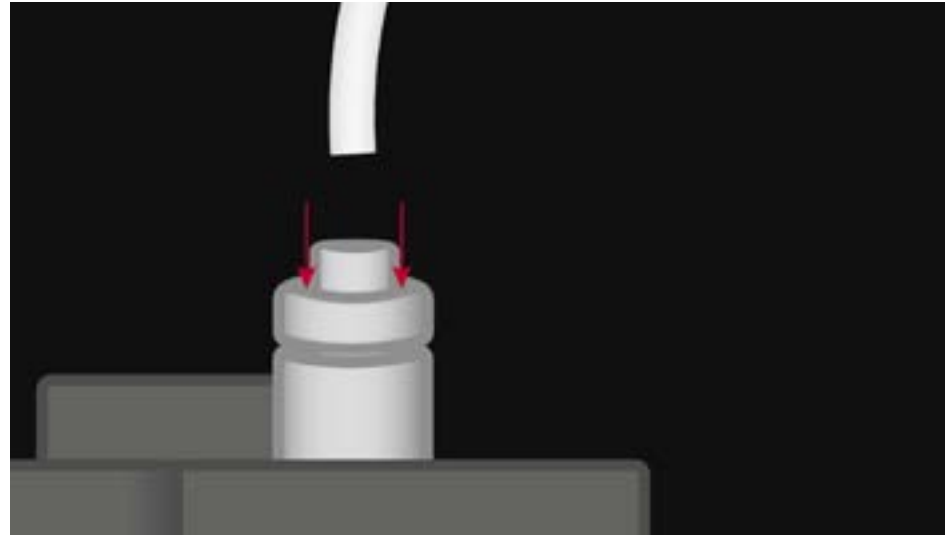
Video: Load
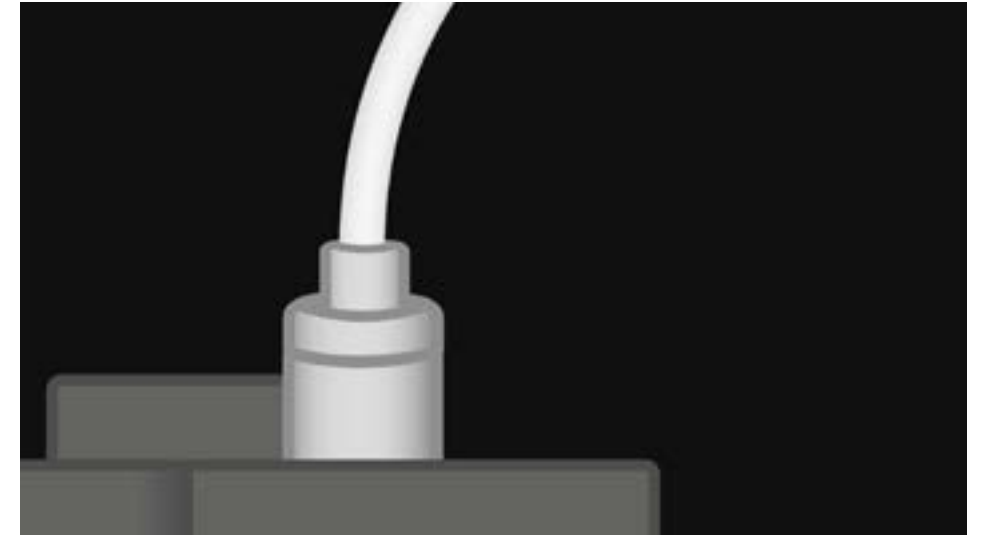
Video: Load

Audio - Game Music

The game music of Minecraft played a immmportant role in the creation of our game music soundtrack. However, we also took inspiration from games like Job Simulator and Strawdew Valley. These three games have a great passive background music. This is the kind of music we wanted to go for as well in our game.

When playing one of these games, you mostly don't notice the tracks, until you tune in and realise the how good the music is after hours of playing.

Since we had to use Wwise for our game music, we had to adapt the work flow of creating the music to it. Now we approached it more with a sequence of music in our minds instead of thinking of the song start to finish and building it up piece by piece.

We created a bass line and drums together with som ambient percussion and samples in the background to create a solid foundation for the song.

Then, we added different melodies over the foundaion of the beat we created, while having the way it will be sequenced in Wwise in mind. Doing it this way, made it a lot easier to create a sequence of sound that felt like an evolving track.

The music really helps to bring the game to life.

Audio - Sound Design

3D Printer

As we recorded the 3D printer using contact mics and ambisonics, we had a lot of great audio recordings to work with, as the contacts picked up the quieter parts of the 3D printer in great detail. This paired with the ambisonic mic capturing the Makerslab room and natural ambience of the 3D printer, really captured what we were looking for.

Unfortunately, we realised the using the ambisonic recodings in the game did not pair up well with the art style and theme of our game.

Nonetheless, it was a enjoyable and educational experience. We learned that besides having good adio recordings, context is equally important for sound design.

Audio - Sound Design

Robot

At the beginning of the semester we decided that our robot should sound cute and somewhat humanlike. Animal crossing was our main inspiration for the robot sound.

First, we had Andrea reading various scripts in the mic, as well as making human expressions such as happy, sad, frustrated and angry.

Unfortunately, this way wouldn't work for the implementation, as it is really hard to align the voice lines with the speed of the text.

So we had to find another approach to do the robot sounds. Andrea recited the Spanish alphabet, which we then cut and processed each word individually to create a sound bank in Wwise that had each individual letter as a seperate play event.

This apporach worked perfectly as we could tell the script to play each letter in correspondence to the text. This was great in two ways. First, it meant that the audio was in perfect sync with the text, no matter how short or long the text is. Second, the robot now have a more human aspect to it, as the letters are the same, which makes it easier to feel empathy to the dramatic robot.

As for the expressions and certain scenes, we used sourced sound effects that where more "robotic", as using Andrea's voice for angry expressions or sad expressions sounded way to realistic and human even with processing (pitch shifting, redux, saturation and some resonators).

Challenges

Merging

The hardest challenge was to merge all the different Unity files. Often bugs appeared during this process, which we then had to fix.

Colliders

It took some time to find the right way to use a collision on the objects. Due to a lot of colliders, close to each other, some things are harder to grab or let you move around.

Every single item that had a collider, could block something.

For some things, we even had to make a custom collider to make the collisions work.

Unity and coding

Learning Unity and coding was a long process. We lost a lot of time on learning how to code.

Coding itself was very time consuming as well. It was a mix of researching, testing and bug fixing before finalising a certain part of the code.

3D Modeling

Most of us didn't know how to 3D model, since we had to recreate the whole room, we had to learn how to 3D model. Unfortunately, the models that were being made, had then to be rebuild before it could be used in the game.

Audio

Being able to decide and create the sound design for this project was an amazing experience, as my only previous experience in game sound design was last semester. However, then we where given a map and bank of sounds to work from, so it was more of a learning experience. With this I had freedom to create and implement.

2D Animations

The 2D animations sometimes took a lot more time than expected. This led to falling behind on the planning and catching up, while also making changes to the animation based on the feedback that was given.

3D Animations

3D animating takes a lot of time to create. When the animations were finally done, we had to implement it into Unity. However, we stumbeled on some problems Unity was giving us, so we had to make changes to the animations before implementing it again.

Improvements

Speech bubbles

We wanted from the beginning to have speech bubbles. Sadly, we weren't able to add this into the game.

Our solution for now was to add a text line. If we had more time, we could make a nice lay-out where we could place the text in.

UI Printer Screen

Due to its complexity and the lack of time and knowledge, it was not possible to create a slice preview. However, this does not disrupt the learning experience of the process, but it would have been a valuable addition. Therefore, it is important to always double-check your work.

Unload/Load

Since the nozzle box with the filament attached to it is quite small, it is hard to make it interactable. If we had more time, maybe we were able to find a solution for it, so that we could implement a real experience of the unloading and loading process, instead of a simple 2D animation.

Robot Animations

Even though the robot already has some animations, it could be nice to have a little more interactions with the user. We could let the robot fly around in the room or have him bounce on the music when you have to wait for a step to finish.

MAKING OF

THE VIDEO

Introduction photostudio

Getting an introduction of the photostudio was interesting for us, since we wanted to take individual an group pictures. For some of us, it was the first time using a photostudio.

We tried a colorful background out to see what kind of effect and mood it brought to the final image. Since the Fh has different colored backgrounds, we could play around with these in the future.

Moreover, we learned more about lighting:

- Where do you put the lights?
- Where do you put the reflectors?
- How do flashes work?
- Which temperature will we use?
- Which intensity works best for this image?

These were all questions we had to think of before taking a picture.

Research

Color Grading

For the color grading, we were looking for something creative. We wanted the colors to pop. We took inspiration from a music video.

Gold – BROCKHAMPTON
https://www.youtube.com/watch?v=n_ZRRlVDVa8

Title Sequence

We wanted to include a title sequence to make our video more complete. It is the first thing our viewers will see. To make them curious on the rest of the video, we focused on details of the 3D printer.

We did some research on different title sequences, but the ones that stood out the most were the following:

The Crown
https://www.youtube.com/watch?v=yJdrrrIT8hQ

The Last of Us
https://www.youtube.com/watch?v=8SWhBsbxmpk

Camera testing

We did some camera testing to find out which cameras work best for our video. We needed a camera that is easy to use, as some of us don't have any experience with filming, and a good automatic focus for the same reasons.

Brainstorming

As for our video, we also wanted to have as many ideas as possible. So, we emphasised once again that every idea is welcome during the brainstorming process. Below you can see our list of all the ideas we had during this process.

- Telling a story
- Advertising story
- Show us
- Show different software we use
- Text animation
- Matrix text for coding
- Include printer
- Related to game
- Highlight keyfeatures of the game
- (bossy) Robot in video
- Person playing the game
- Greenkey
- Inside the game
- Robots POV
- Spontaneous videos
- Analogue look
- Title Sequence

Once again we let all our ideas sit for a few days before we started discussing on which ideas we wanted to work with. Then we started the voting round to choose our main idea. Together we came up with a concept for the making off video.

Must have:

- Spontaneous shots
- Old film look
- Showing us
- Group and individual pictures

Could have:

- Text animation
- Extra visual effects
- Robot

We decided to focus on the people behind the project and the EPS experience instead of focussing on our game and how we created it. In that way, we have a fun and creative approach of the making off video.

We also chose for the old film look as it is very popular now. It also makes it possible that anyone from our group can film, even though they don't have steady hands or any knowledge from filming. This will give us many different point of views, which is needed if we want to show the reality behind the project.

Brainstorming

First idea

Start:

3D printer prints a camera. We will use this printed camera to film the rest of the making off video.

Middle:

Spontaneous shots of us working, laughing an playing together.

End:

Filming us taking group pictures of our team in the photostudio. Our group picture will be the final shot of the video.

Second idea

Title Sequence:

3D printer prints our logo or our mascotte. We hear silent drums in the background.

Start:

William playing the drums, which is a part of his introduction.

Middle part 1:

Introduction of the different team members and their tasks, consisting of spontaneous shots.

Middle part 2:

A mix of several spontaneous shots to show different aspects of the process and the dynamic of the group.

Middle part 3:

Go to the lake and film underwater. One of us will jump in the water to have a transistion to the ending. The music will also sound different.

End:

Same person that jumped into the lake ended up in the VR game. We see the VR game in the background.

Person takes the glasses of and leaves the office.

Brainstorming

Concept

For our making off video, we were looking for a creative, refresing and original approach. That's why we decided to focus more on the people behind the project, rather than showing how we made the project.

Every making of video looks similar. They show the first steps, then the struggles and at last how it all came together. But not many of them show the real people behind it.

What do they do behind the scenes? How do they behave when there is no camera pointing on them? How is the dynamic between the members of the team?

Those are all things we wanted to show in the making of. It makes the video entertaining and easy to watch.

Moreover, it shows what EPS is all about. EPS is about good vibes, teamwork, fun and dedication. You will see us working on the project, but you will also see us being our silly selves.

As showing ourselves and recording everything we are doing is the best way to really show what EPS and PRiNT3D is all about.

Look and Feel

The intro will have some basic color grading. Not too many things happening. This symbolises that at the beginning, we couldn't do much for the project. We had an introduction of the makerslab and the 3D printer. But that was all we could d at that moment.

The rest of the video will have some 2D animations combined with color grading and VFX. We want to let it seem like we shot the rest of the video with an old (analogue) camera.

For the 2D animations we wanted to include simple but visible animations that put the focus on a small or bigger event in the video. These animations make the video more fun and playful.

We also played around with the introduction of everyone. First of all, we wanted to use a lot of spontaneous shots to give the viewer a good first impression of all the team members.

Furtermore, we included everyone's handwriting, which we then converted to a 2D animation. This will make the making of video feel more personal.

At last, we added some small animations to emphasise certain movements and to make the video more dynamic. The animatiosn are simple, as we don't want to overcomplicate things.

Audio

Concept

As for the audio for the making of video, we wanted a cool, fun and up beat song that represents us. Since our motto is "we are fun", we wanted to have a more niche genre of music.

Titel Sequence

A calming out-of-space sound with a speech on robots. We don't want to give to much information away during this intro, so you will not understand much of the speech. What you can understand, is the last sentence of the intro before we move onto the next part of the music: "What can a robot do?"

Intro

Drums are the main star here. They will be composed to an uptempo melody. It has a lot of dynamic, which represents us being excited to start the project.

Middle part 1 + 2

For the introduction and the mix of spontaneous shots, we wanted to use of different elements to make a dynamic sound. Having variation in the music is important, as our making of video is quite long.

That's why we wanted to create a mix of drums, sax, trumpet, the out-of-space sound and the speech. They will merge perfectly together with the video.

Middle part 3:

When the person jumps into the lake, we want to apply an effect to the audio, so that you can hear that you are under water. The audio will sound more muffled. It will give the audience an immersive feeling.

End:

For the in game view, we want to keep thos muffled sounds, to really show and let the audience hear, that they are in another room. They are not in the real world anymore, but in a virtual world.

When the person takes the glasses of and leaves the office, the music will slowly fade out. As the video ends, the music ends as well.

Storyboard & Script

Since we wanted to have spontaneous shots, we didn't make a script. We did had some ideas of the kind of shots we wanted, but what we were going to do in front of the camera was up to us and our, sometimes silly, behaviour.

We did made a storyboard for the title sequence. Unfortunately, we forgot to take a picture of it. We do have a video of it, which we included in our making of video.

For the underwater shots, we knew what we wanted to do and how we were going to do it. We wanted someone jumping in the lake with a GoPro to have a transition to the VR game.

The ideas were in our head, but we didn't transfer them onto the paper.
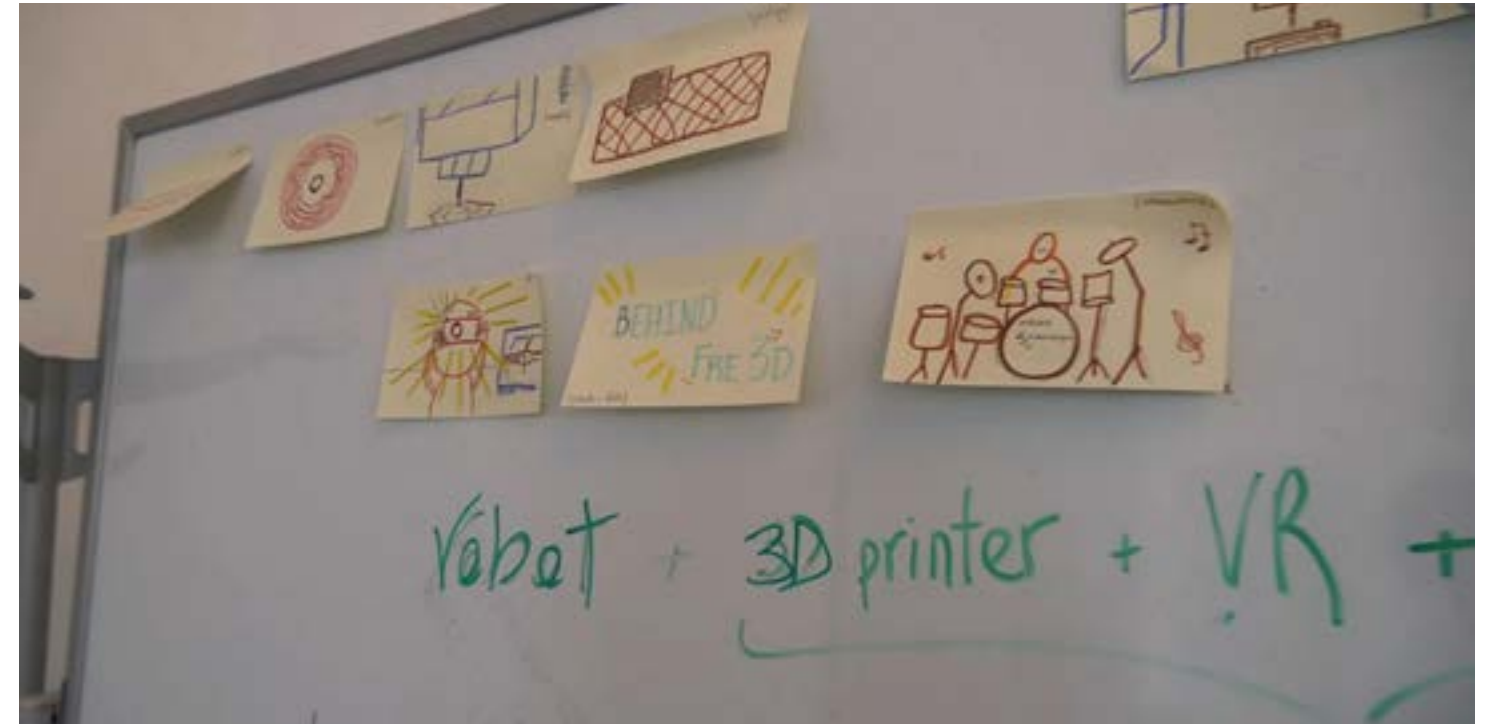
Photostudio testing

We wanted each one of us to have a different color. There were different options to do so. One was by using colored lights, the other by using colored backgrounds.

The first option, is the hardest one. However, we wanted to test it anyways and see what we could achieve.

We found some examples online, made by an American analogue photographer, to get inpsired. See picture on the top left to see one of his work that we used as a reference.

Linus and his camera
https://www.linusandhiscamera.com/

First we used a spot light to try to recreate this effect. Sadly, we couldn't make it work. So we traded the spot light for a beamer. Here we did get the effect we wanted.

Moreover, the beamer gave us more freedom and control on what was being projected. We tried circular shapes, with both a soft and hard edge, before moving on to more creative shapes such as our robot.

We ended up not using this technique for the individual and group pictures, as it was not yet perfect. We still had a lot to learn and it would take too much time to do so.
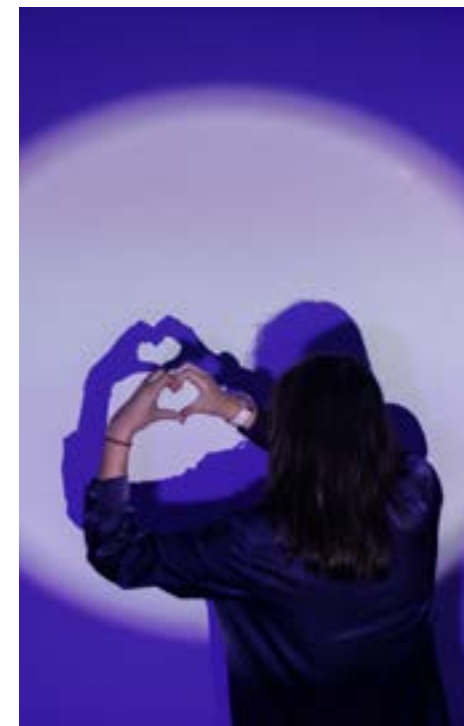
Sequence

As already discussed in the explore phase, our video consists of a title sequence, an introduction of each one of us, a mix of different spontaneous shots the game, and a credit scene.

The title sequence will focus on the details of the 3D printer to make the viewer curious.

The introduction will show videos of each member in our team. We also added more effects and animations to the footage to make it more creative. Our handwritten names that we put on top of the first shot of each member, will make the video feel more personal.

The mix of all the shots will show us and our project a bit more. You will see the different roles we had in the project, as well as the dynamic between the team members.

At the end, we move inside the game. The viewer will get a glimpse of the 3D Makerslab room.

To close off, we made a credit scene which will show some bloopers, along side with the rest of the credits and aknowledgements.

We will use a flash as a returning element throughout the video. The flash is added in between the different parts of the video, as well as between each members introduction.

We also included some titles to give more explenation on what the viewer can expect from the different parts they will see.
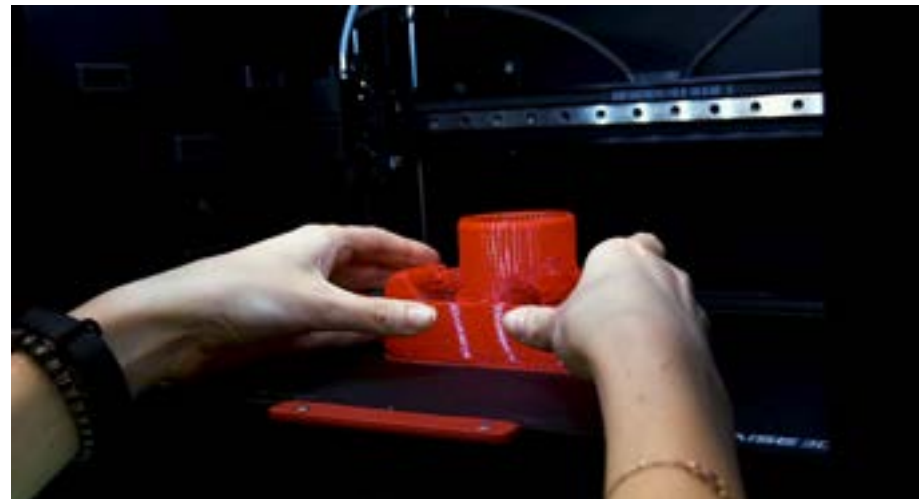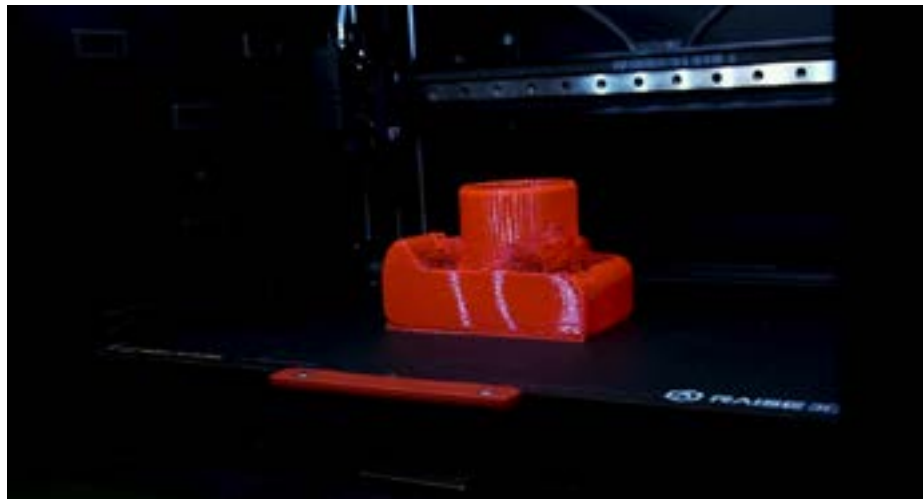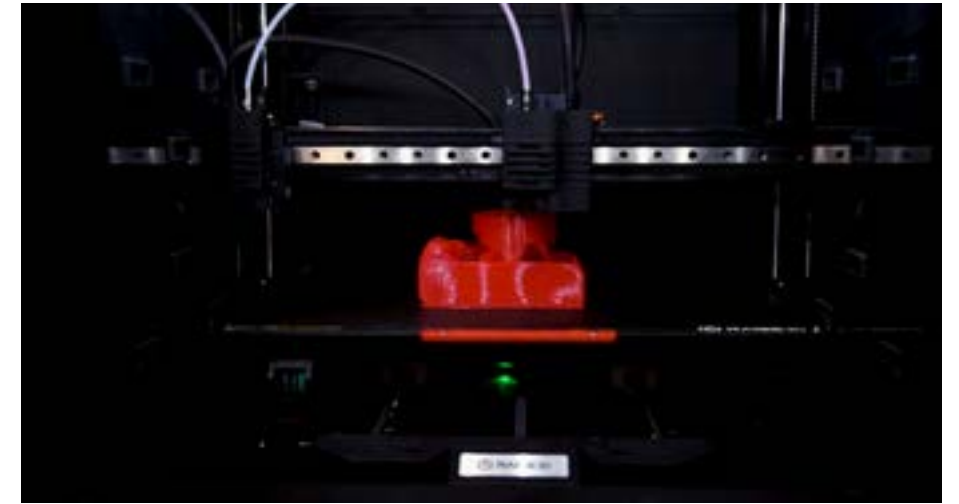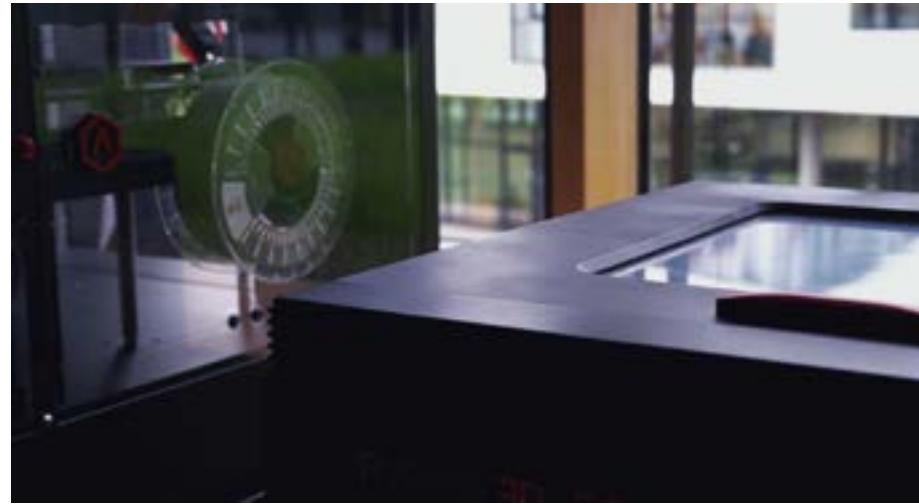

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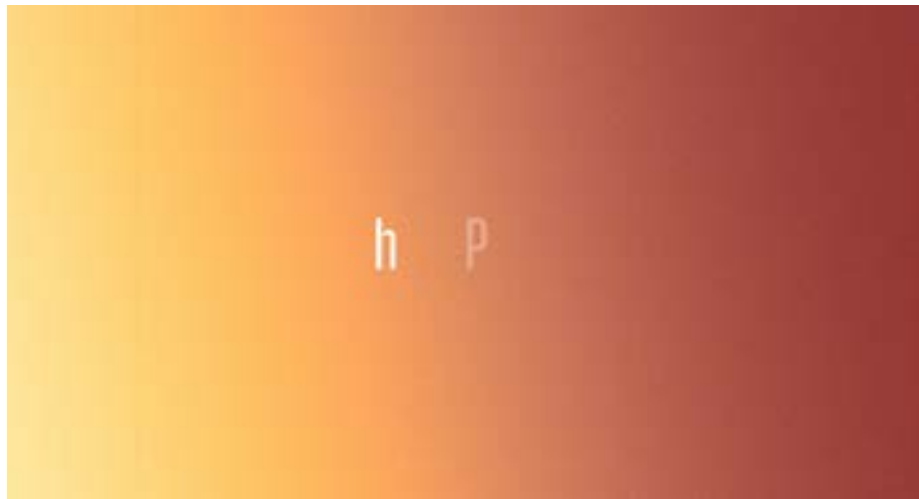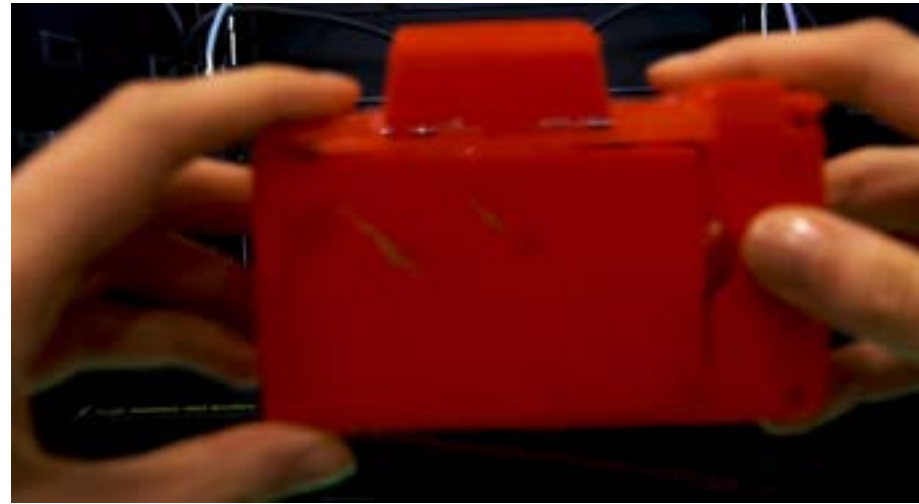
Sequence - title sequence
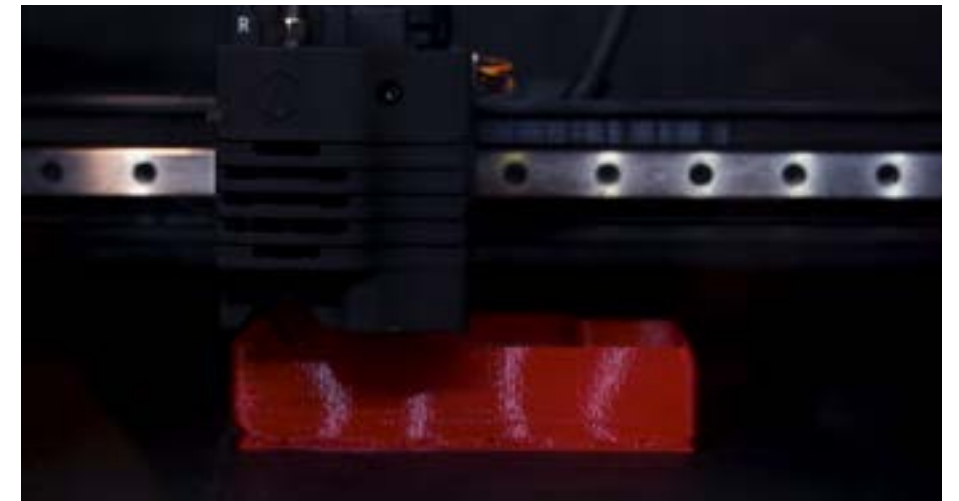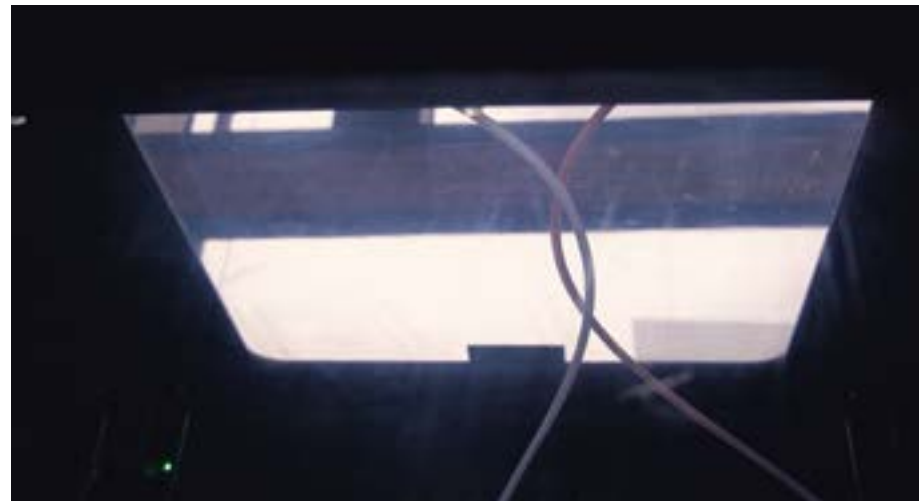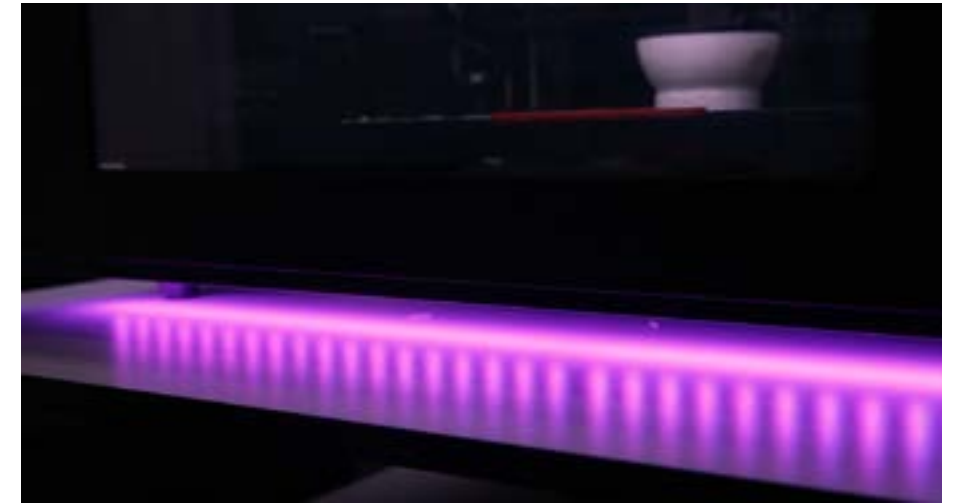
Sequence - title sequence

Sequence - title sequence

Sequence - introduction

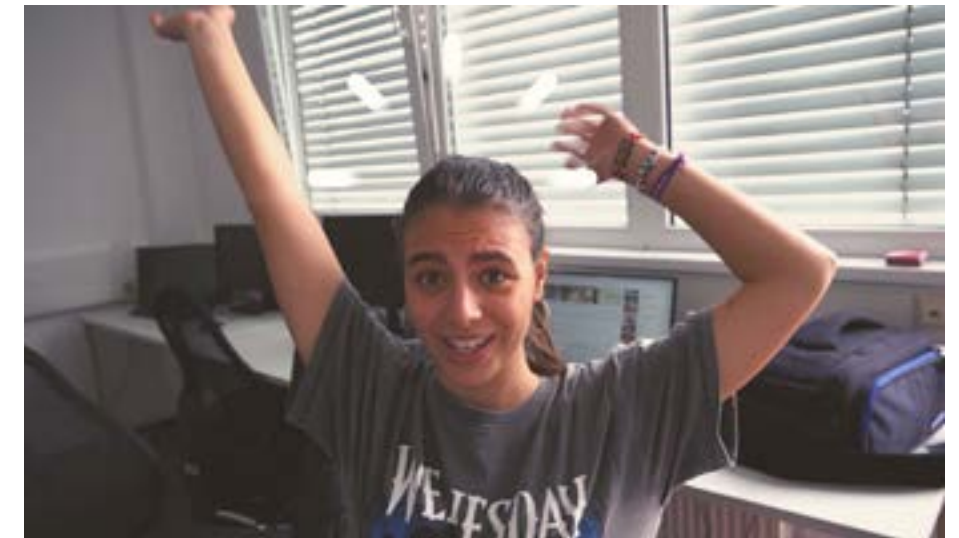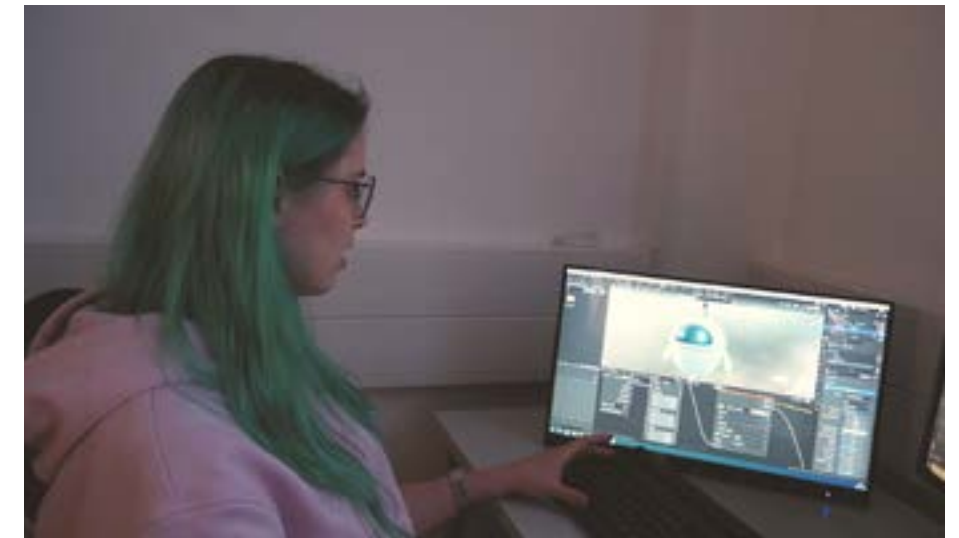# Sequence - introduction

Sequence - introduction

Sequence - introduction
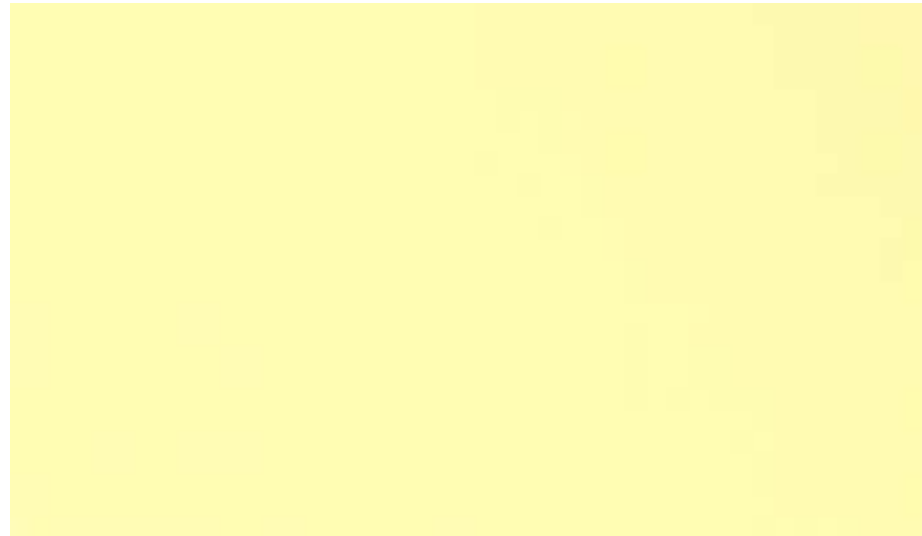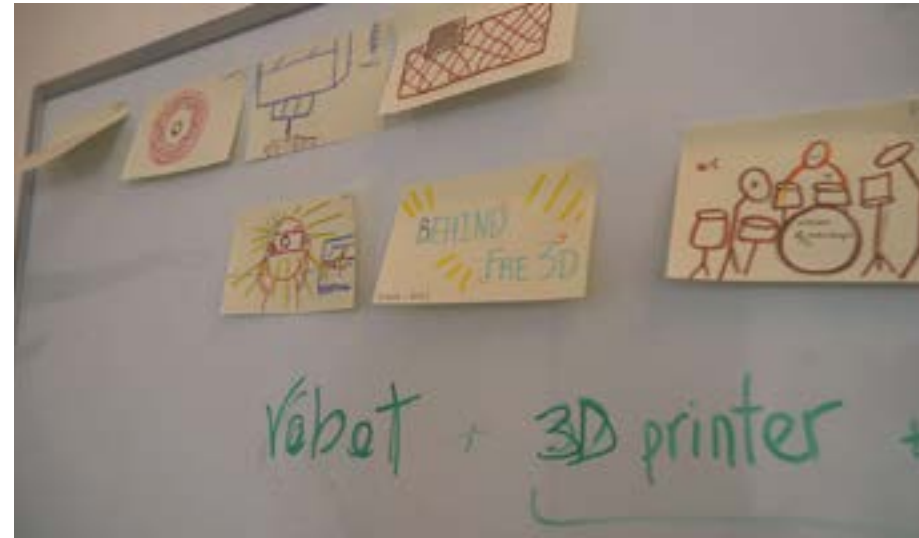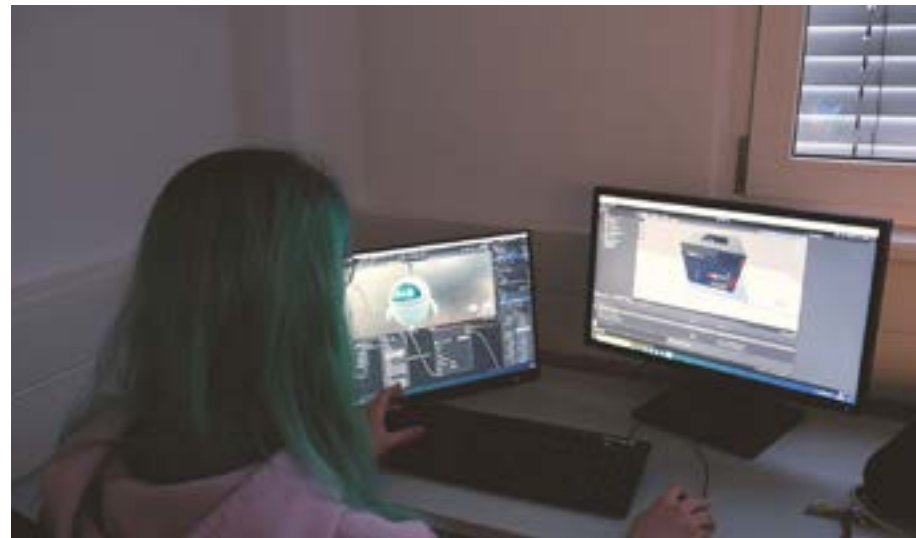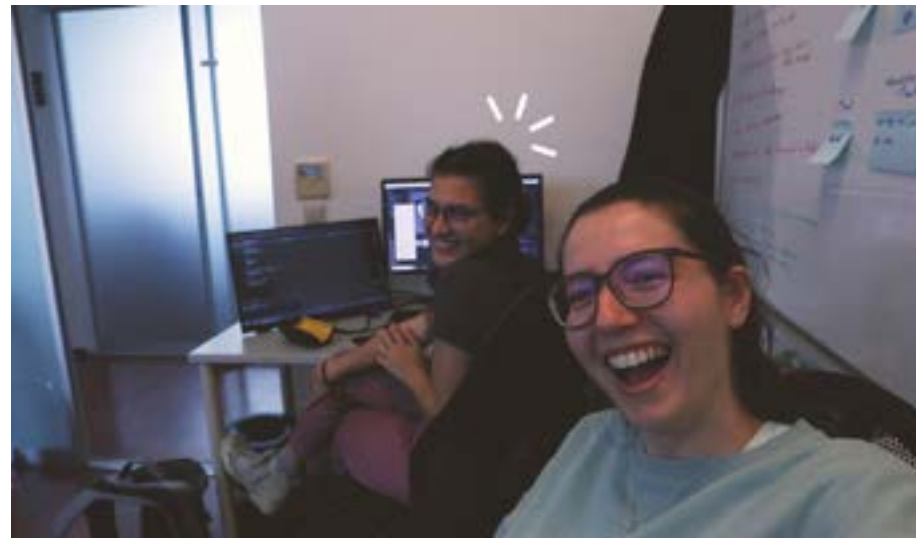
Sequence - introduction

Sequence - introduction

Sequence - introduction

Sequence - introduction

Sequence - the mix

Sequence - the mix

Sequence - the mix

Sequence - the mix

Sequence - the mix

Sequence - the mix

Sequence - the ending

Audio

Most of the recordings were sampled and processed in the daw. We used the "amen" break as the basis of the drums and proceeded resampling it.

For the speech about robots, we recorded Andrea's voice and used it to put several elements in the track.

We then proceeded by adding more bass into it to bring the low ends up, as well as samples of trumpets and saxes to flesh out the track more by creating a more dynamic mix.

We had to make a lot of changes to fit with the video, since the video was constantly changing.
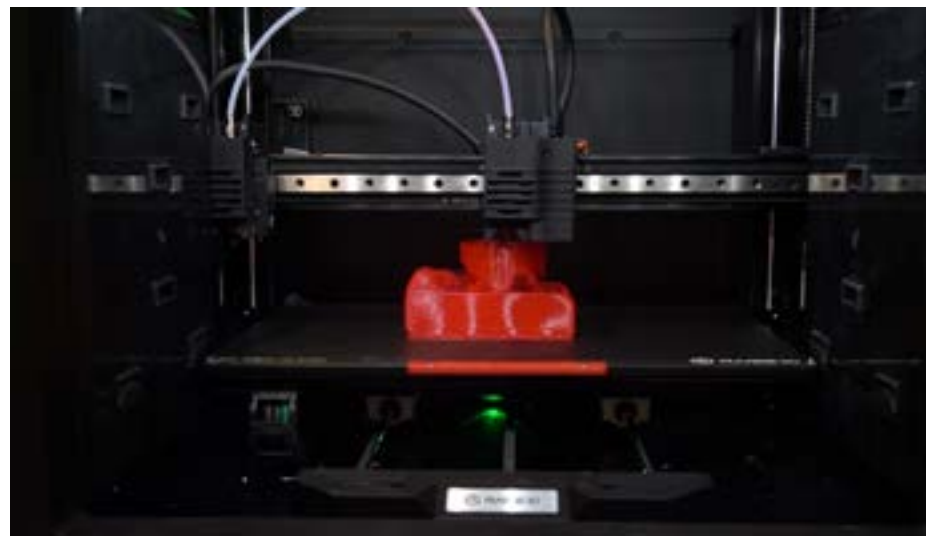
Postproduction
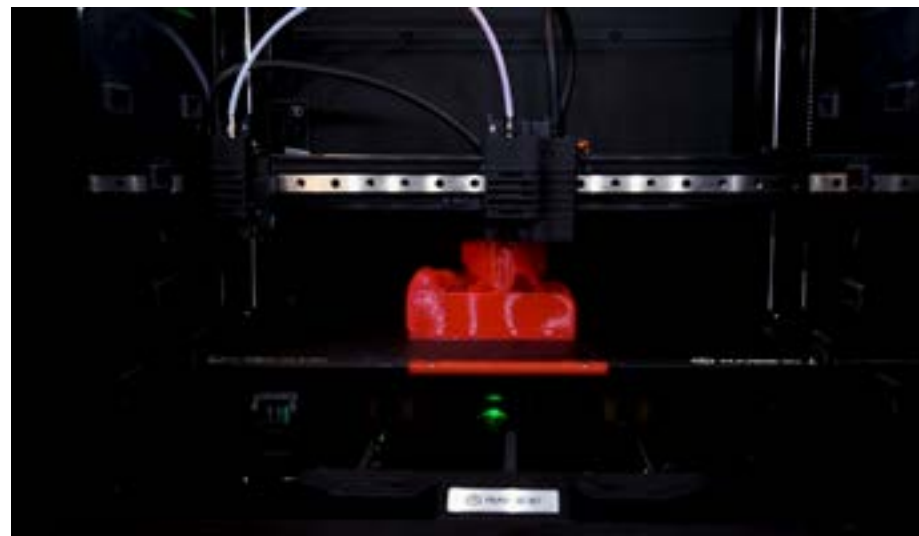

Original

Color Grading

Original

Color Grading

Postproduction

Original

Color Grading

Animation

Original

Color Grading

Animation

Postproduction

Original

Color Grading
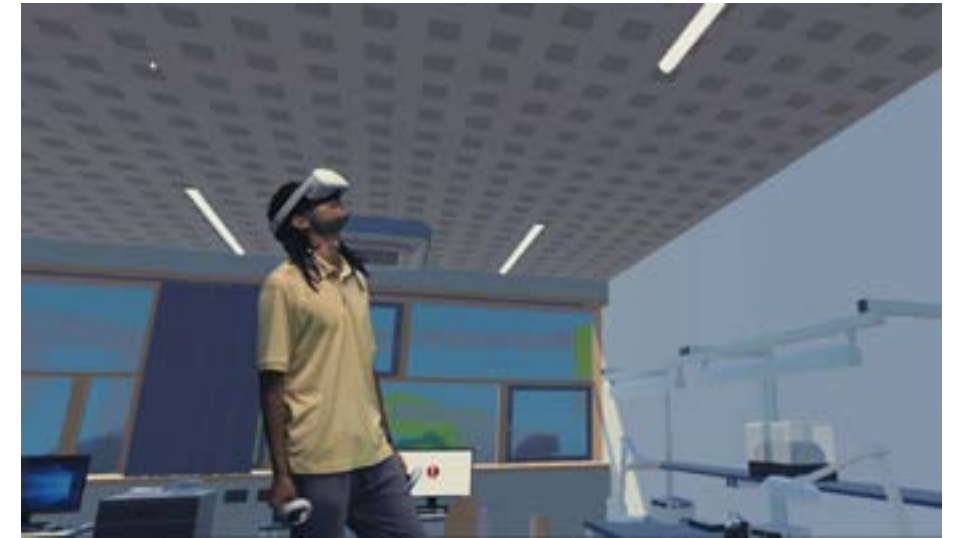

Animation

Original

Color Grading

Animation

Postproduction

Original

Background removing

Adding New Background

Glow

Color Grading

Challenges

Transitions

We needed to find a creative approach to transition from one part of the video to another. We solved most transitions by adding a flash to afootage to flow into the next one.

The hardest transition was finding a way to go from the title sequence to the rest of the video. After some brainstorming, we decided to print a camera and bring it to the camera, so that it would fill the whole frame.

Focus

Since we wanted everyone to be able to film, we set the focus on auto-focus. However, when zooming in or moving while filming, the focus was often off.

We were not familiarized with manual focus, so it was hard to get the focus right.

Filming

Filming in general was a challenge, as we didn't always find the time to film. We started brainstorming in an early stage, but we had to switch to working on the game.

This led to us starting to film quite late, which had consequences for the rest of the video.

Making the sequence

For creating the sequence, we had to learn Premiere Pro, as it works better with After Effects for the animations and VFX than Final Cut pro.

Color Grading

At first we tried to color grade in DaVinci. However, the workflow was too complex as we were animating in After Effects. Sadly, you cannot import an AE file into DaVinci Resolve.

So we had to color grade in After Effects, which we were not used to.

VFX

When we went to the film studio, we didn't know how to use the studio lights. This resulted in a lot of green shadows on William, which made it harder to remove the green background.

Music

Since the video was constantly changing, the music had to change as well, which was very frustrating. We had to make several versions for the music.

Improvements

Footage

Even though we love the spontaneous shots we made and included in the video, some of them are out of focus. We cannot reshoot them, as it was shot spontaneously.

We could have paid more attention to the focus while filming. Another option is to use another, in focus, shot to replace the "failed" shot.

White Balance

Since we kind of forgot to pay attention to the whitebalance, all the shots have a different temperature. This was not always fixable with color grading. So now we have a lot of shots with a different white balance.

Lighting

Since we wanted everyone to forget they were being filmed, to have the most spontaneous shots, we decided not to use lights, as it is very visible.

However, for some shots we actually needed extra lights, to light the subject correctly. The shots in the BIZ were the hardest to film, because of the hard backlight. It was either underlighting the subject or overlighting the background. Adding lights could have solved this problem.

Greenkey

To have William more inside the game, it might have worked better if we filmed him from the back, so that he really is a part of the game.

Using the same lighting as in the game, could have emphasized this effect more.

EPS GAME-MEDIA

WE ARE FUN

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